FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

A Reuben H · Donnelley Publication

NOVEMBER 1961

Warehouse wall topples into Ellsworth Street during seven-alarm Philadelphia fire on October 1. Blaze forced evacuation of 300 persons from neighborhood, as falling walls demolished three adjacent row houses

IMPACT PROTECTION!

Heavy, flaming debris smashing over fire fighters' heads is among hazards that top the list of most frequent fire department injuries.

Knowing this, it's easy to see why our engineers have designed HARDBOILED® fire helmets to insure maximum impact protection, with minimum impact transmission. Even when exposed to temperatures as low as − 60° F. or as high as + 2,400° F., these tough fiber-glass shells surpass Federal and State Specifications for head protection. Yet, complete with either POWER-BLOC® or standard suspension, they weigh only 22 ounces.

We can safely say, "Bullard fire helmets are the best impact protection a fireman can use. Try it and you'll see that no fire helmet surpasses Bullard...in comfort, safety and economy."

BULLARD
INDUSTRIAL SAFETY EQUIPMENT

Write for fire department catalog.

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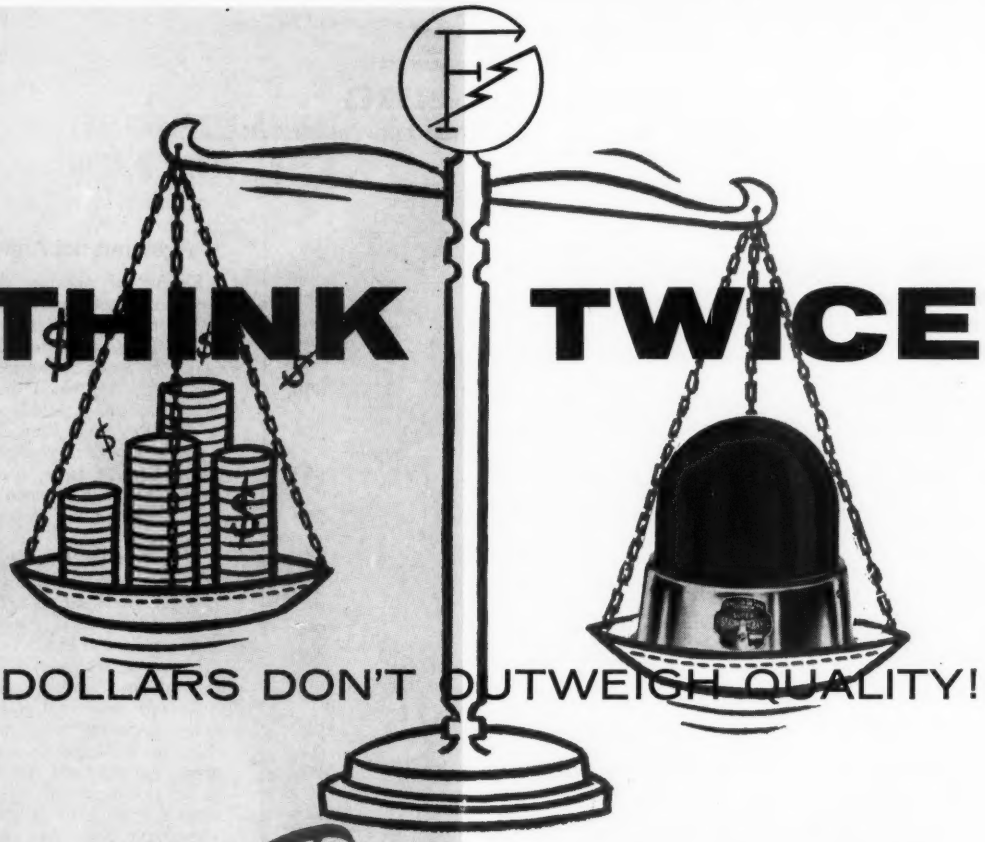

Buy ONCE!

IF **imitation is the most sincere form of flattery—FEDERAL BEACON RAYS have been sincerely flattered,—(if you don't give the matter a second thought). The market *is* flooded with revolving lights—but this is hardly flattering—*few* are worthy imitations; most sell at a price and Quality, Performance and Dependability are decidedly secondary!**

CHEAP REVOLVING LIGHTS ARE NOT BARGAINS—they're just cheap! They're made to sell, not to use!

FEDERAL set the *Standard of Quality* with the first BEACON RAY—*its selling price has remained the same since its introduction 12 years ago!* This price reflects its Quality!

With continually rising material and manufacturing costs FEDERAL BEACON RAYS ARE A *REAL* BARGAIN!

THINK TWICE—*or* you may *buy a cheap light twice*—instead of getting a one-time bargain!

INSIST ON THE QUALITY PRODUCT—*BE SURE IT'S FEDERAL!*

SPECIFY FEDERAL BEACON RAYS and FEDERAL COASTER SIRENS on *your new equipment!* Write for Catalog #300 *TODAY!*

FEDERAL SIGNAL SIGN and Corporation

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FIRE ENGINEERING

THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

VOL. 114 NOVEMBER, 1961 NO. 11

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Aged but not Antique!

Except in antique shops, no premium is set upon age in itself. In most human affairs, however, the wisdom which usually results from long years of experience, and the tranquility which the autumn of life brings are highly valued.

With this issue, FIRE ENGINEERING enters its 85th year of publication. The first issue, then known as the *National Fireman's Journal* was published on November 17, 1877.

Based on its longevity, it can validly be assumed that the magazine has well satisfied the needs of its readers and advertisers to have survived so long.

However, we need not rely on assumptions. Letters we receive from our readers frequently express favorable comments. The chief of a Massachusetts department, for example, recently told us of reading "with considerable interest your many editorials. . . . They have been very informative and educational to myself and the members of the department."

As we enter our 85th year, our entire staff rededicates itself to giving the fire service the complete, accurate and authoritative information it seeks. Editorial comment will continue to be vigorous, but not impetuous — in keeping with the wisdom and tranquility of 84 years experience as the "Journal of the Fire Protection Profession."

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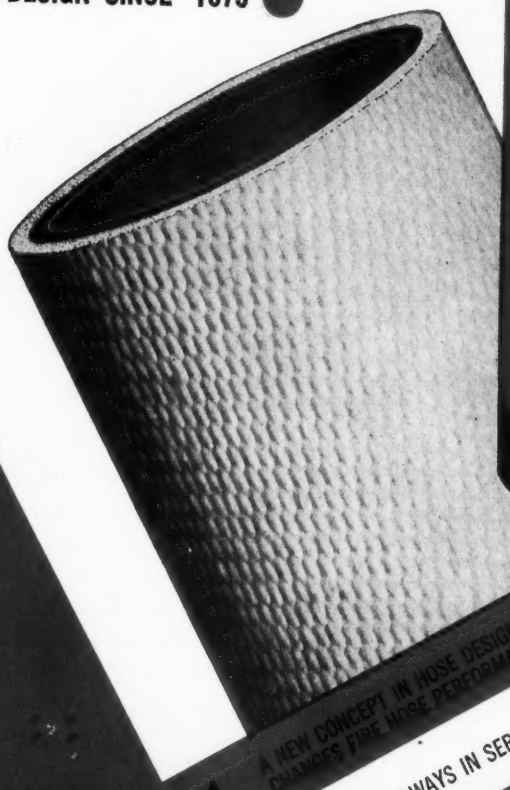

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DEMAND THE VERY BEST...
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Woven Fire Hose

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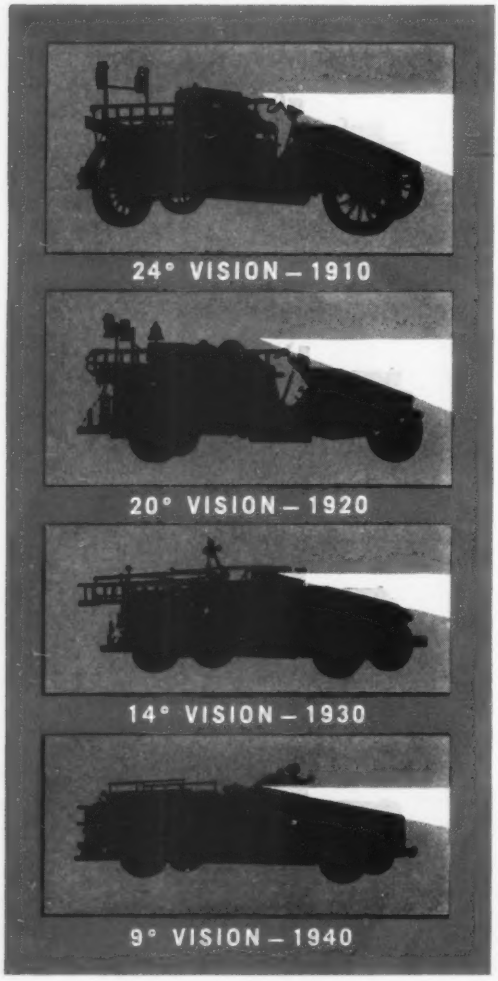
FOR CAB-AHEAD-OF-ENGINE MODELS WHEN COMPARED WITH OLD-STYLE MODELS . . .



IN SAFETY SURVEYS the Fire Service asked for more visibility for the driver. In 1947 American LaFrance introduced the cab-ahead-of-engine design to provide this safety. In the ensuing years, the safety record has been impressive, with the new 900 Series American LaFrance providing even better vision and safety.

MORE VISION for safer driving in heavy traffic and at street intersections.

MORE VISION for accurately spotting the pumper at a hydrant.

MORE VISION for getting through narrow streets and alleyways.

MORE SAFETY for the men riding the apparatus as accident records show. Less maintenance of the equipment, too!

Specify AMERICAN LAFRANCE for more safety in the operation of your equipment.

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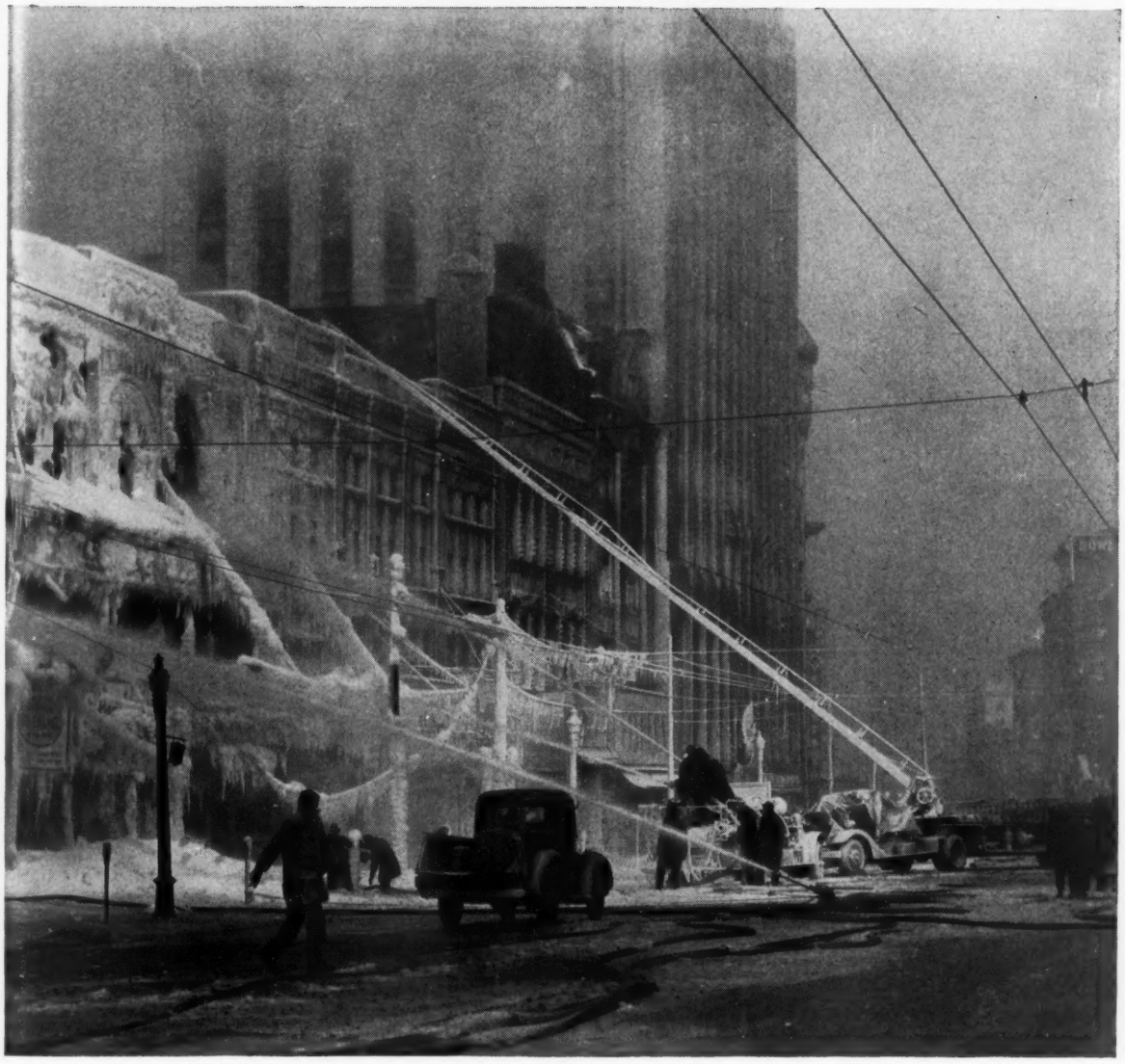


Hose that goes to blazes shouldn't freeze up

New B.F.Goodrich fire hose sticks to its job but not to the pavement

If you've ever wrestled with heavy, waterlogged hose or had it freeze to the pavement, you'll really appreciate the advantages of the new Diamond fire hose, by B.F.Goodrich.

The new *all-Dacron* jacket on Diamond hose is what makes the difference. It absorbs far less water than cotton-jacketed hose, which means that it stays light and flexible, dries fast, is less likely to freeze in cold weather. Mildew has no effect on it. Oil, grease and chemicals can't hurt it.

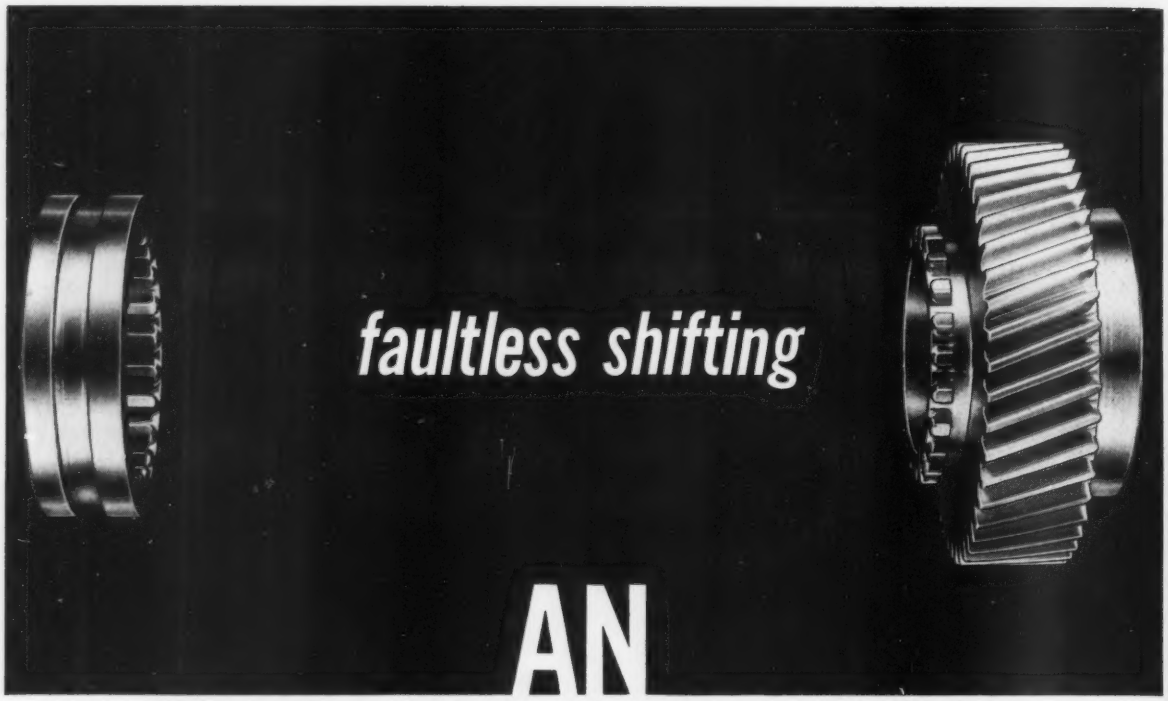
The all-Dacron jacket also makes BFG Diamond fire hose light weight—yet so strong it will outwear ordinary hose many times over. It can be dragged over rough pavement, even raspy ice, without snagging or tearing. It's an easier-handling hose, gets into action faster—and because it's so flexible, many more feet of it can be racked on the truck bed.

A special rubber compound used for the tube stays elastic throughout the life of the hose. Coupling has Koroseal swivel gaskets that seal with hand tightening, never have to be replaced.

To get all the facts on this big improvement in fire hose, see your BFG distributor or write *B.F.Goodrich Industrial Products Co., Department M-184, Akron 18, Ohio.*

B.F.Goodrich

FIRE HOSE



AN EXCLUSIVE WITH WATEROUS ELECTRO-MATIC* FIRE PUMPS

*Registration applied for

Rough or "false" shifts are practically impossible with a WATEROUS *Electro-Matic* fire pump. Yet swift, positive shifting takes only the touch of a finger on the *Electro-Matic* switch. Long rods to the cab are not required, and *Electro-Matic* eliminates damage caused by carelessness or human error in manual shifting. (Of course, if you prefer the manual shift, you'll find *it* smoother with a WATEROUS too.)

Why? Unlike ordinary pumps having sliding gears on a splined shaft, WATEROUS *Electro-Matic* fire pumps have teeth on a circular sliding collar. When you shift from "road" to "pump", these teeth are all simultaneously engaged with the teeth on the drive gear hub. Both sets of teeth are rounded for smooth engagement. The gear teeth which carry the load are never shifted into or out of engagement, so they never get a chance to burr, chip, or grind off. With *Electro-Matic* shift there is spring tension which continues to put pressure on this collar if it should happen to butt up against the teeth on the drive-gear hub. As soon as you begin to engage the clutch, the spring tension slides the collar into perfect engagement—no grinding, no re-shifting.

Simple, safe, dependable and automatic WATEROUS fire pumps with *Electro-Matic* shifting are in use today on more than 2000 fire trucks throughout the U. S.

For more complete information about Electro-Matic fire pumps write:

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80 East Fillmore Avenue • St. Paul, Minnesota, Dept. 3F16

ANNIVERSARY 75 WATEROUS SINCE 1868

Why is one name on more fire radios than all others combined?

Experience has proved that Motorola builds a rugged radio for a rugged job.

What makes Motorola more rugged than others? Here are a few examples:

Precision tuning coils are made *right* to stay on frequency...no matter how bumpy the road. Critical selectivity circuits are sealed in plastic, guaranteed for life. Every major component is secured against breakaway and "whip."

The result of this built-in ruggedness is longer equipment life, fewer outages, less maintenance and *lowest communications cost.*

Can you afford to rely on anything less than Motorola?

For full details on Motorola radio—and how it can give your department the most *dependable* communications available today—write Dept. AFE 144.

MOTOROLA 2-WAY RADIO

Motorola Communications & Electronics, Inc.

A Subsidiary of Motorola Inc., 4501 Augusta Blvd., Chicago 51, Illinois

MUELLER®
IMPROVED FIRE HYDRANTS are ready for action — *anytime!* A bronze weather cap keeps water out of the bonnet, prevents ice from freezing the operating nut. Permanent seals guard thread and bearing surfaces from inside and outside water. Double drain valves automatically empty water from barrel section when hydrant is not in use. The lower barrel is tapered to prevent heaving by frozen ground. Traffic damage can be repaired any day of the year without digging or shutting off the water supply.

Whatever your weather, Mueller AWWA Improved Fire Hydrants are always ready for immediate service.

Complete information and specifications available on request.

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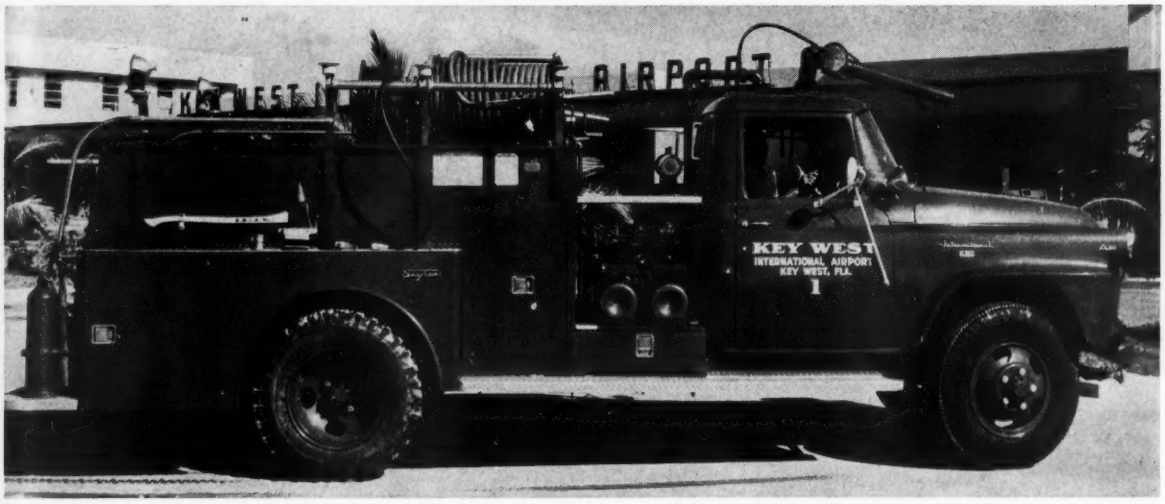
Seagrave ALERT

AIRPORT CRASH TRUCK



Indispensable for large Airports . . . Complete protection for small Airports

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- 500 Gallon Water Tank.
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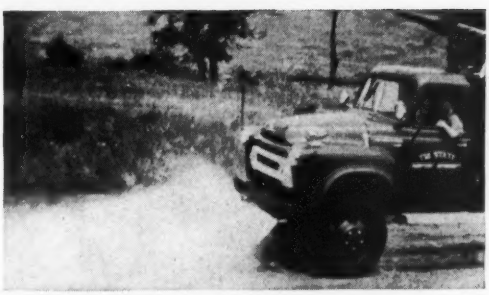
- 2 Ground Sweep Nozzles for Fog-Foam.
- Rockwood Type "D" Foam System with 50 Gal. Foam Bladder.
- 150 lb. CO_2 System with 50 ft. Hose and Discharge Horn.
- 150 lb. Dry Powder System with 50 ft. Hose and Nozzle.
- Also equipped with all necessary hose, ladders, lighting system and miscellaneous tools.



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D 100% WITH DACRON®

POLYESTER FIBER

Needs No Drying... Can Be Put Away Wet!

Repack Wet. Hose jacketed 100% with "Dacron"* polyester fiber can be put away wet, because it's unaffected by moisture and mildew. Just wash it down after use, pack it on the truck, and you're ready to go again! It's never out of action on drying towers—so you can operate with less hose!

It's Tough. You can drag it through rubble—stomp on it—splash it with chemicals—soak it in water. This hose will *take it* and come back for more. In one test, hose jacketed 100% with "Dacron" was ready for immediate action after being dragged 8 miles on asphalt at 10 mph. A cotton hose was unusable after the same treatment for only 3 miles. So you can see how hose jacketed 100% with "Dacron" will cut your replacement costs to the core.

Ask your supplier for more information, or write: E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., D. M. 16621, 3rd & Greenhill Avenues, Wilmington 98, Delaware.

*Du Pont's registered trademark for its polyester fiber.

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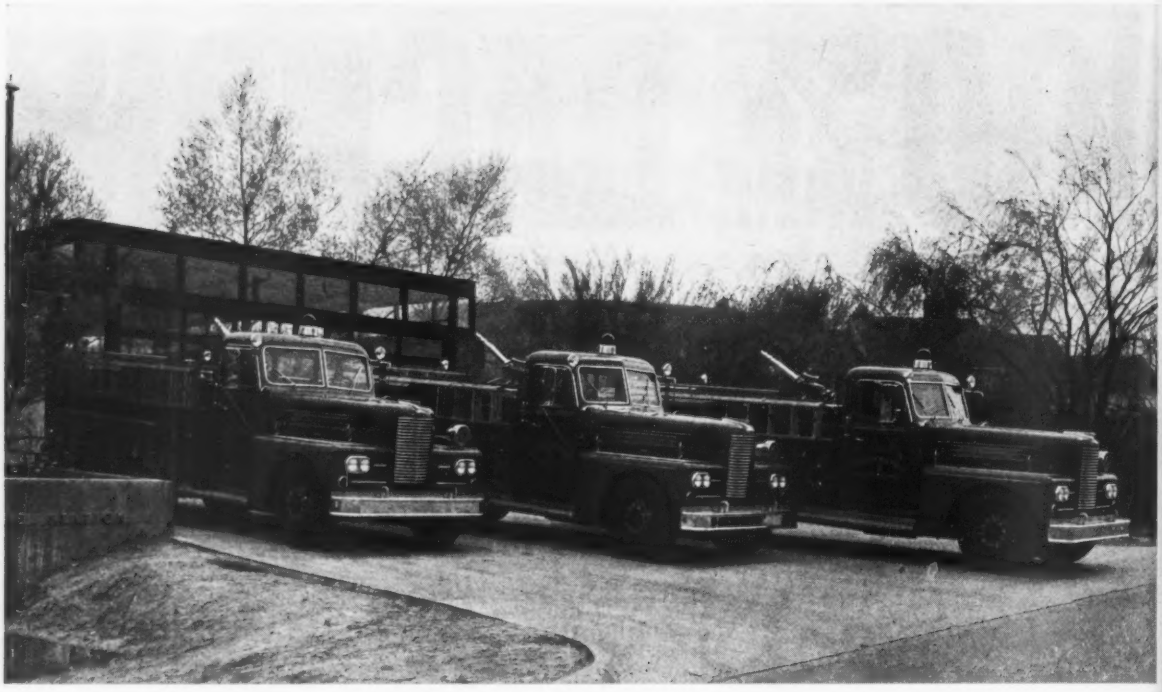
. . . through Chemistry



CEDAR RAPIDS SINCE 1935

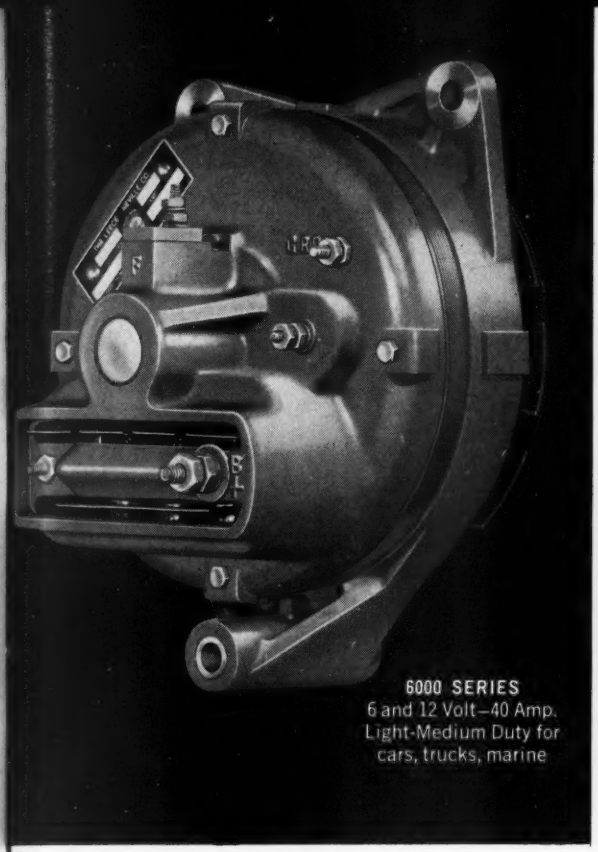
Recent addition to the Cedar Rapids Fire Department of three more Pirsch Pumpers, makes a total of ten Pirsch Pumping Engines and three Pirsch Aerial Ladder Trucks now serving this progressive Iowa city, which has been a continuous user of Pirsch apparatus since 1935.

The cut above shows the new Pirsch Pumpers in front of one of the new, modern Cedar Rapids fire stations.

The Pirsch Custom Pumper is a rugged, sturdy, dependable first line fire engine; a true product of experience, it is built in many sizes with a wide range of engines from which to choose the proper combination of capacity and power for your specific local conditions and requirements.

The Pirsch built all-metal Safety Cab is available in several selections and provides real built-in protection for your men against weather and accidents.

Peter Pirsch & Sons Co. KENOSHA, WIS.



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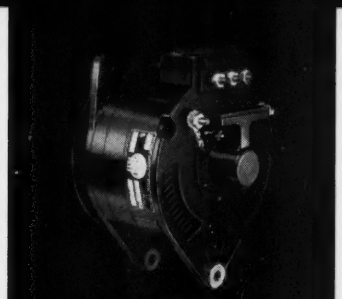

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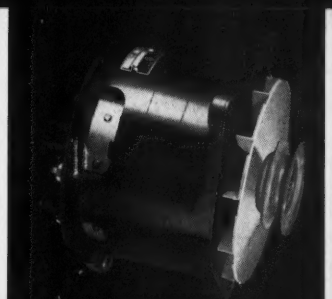

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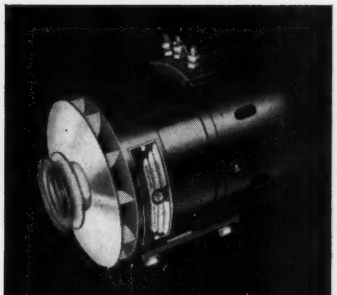

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Heavy Duty—Extra H.D. for
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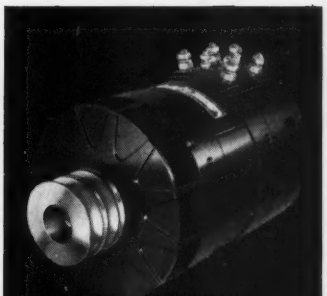

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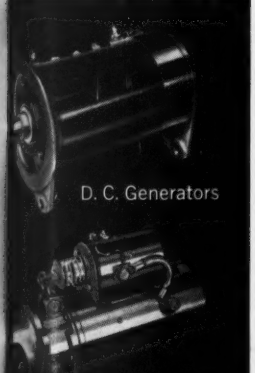

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Cranking Motors

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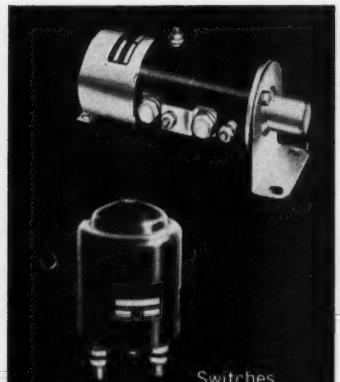
(use with Alternators)



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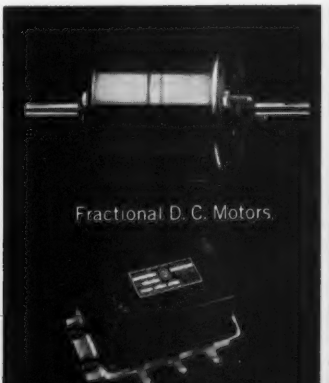
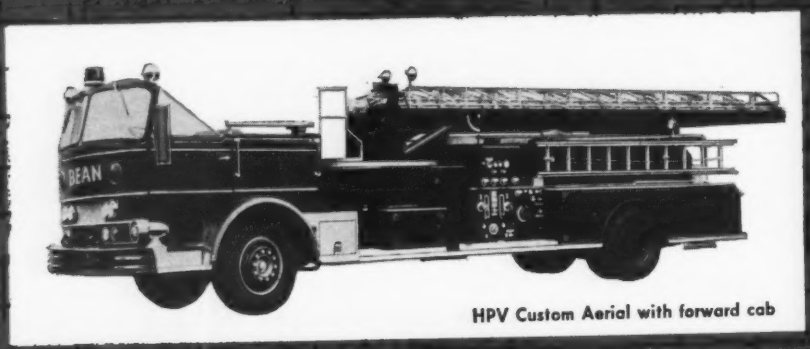
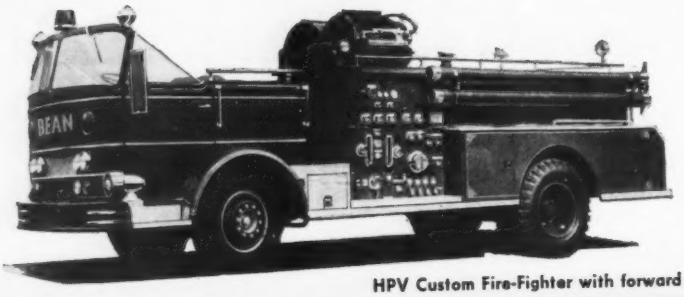


Fractional D. C. Motors

Regulators



HPV Custom Aerial with forward cab



HPV Custom Fire-Fighter with forward cab

Custom Aerial Ladder with High Pressure Fog

DALLAS FIRE DEPT

Step Up to John BEAN® HPV* Custom Fire Apparatus

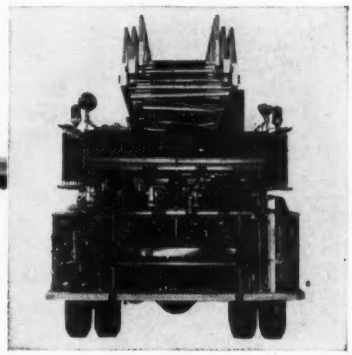
John Bean offers you a full range of custom apparatus — volume pumpers, squads, or aerial ladders — built to deliver the performance and long-term reliability that makes the most of your community's investment.

65', 75' and 85' Aerials with these outstanding features: High tensile steel ladder — base-, mid- and fly-sections — construction that takes the stresses and strains of rough emergencies . . . Dual hydraulic elevating cylinders, outboard for maximum ladder stability . . . Dual controls for ladder elevation, extension, rotation and retraction . . . Hydraulically operated, continuous 360° rotating turntables a full 80" in diameter to provide full working area . . . Fast, self-leveling outrigger jacks to save time . . . Lighted operator's pedestal with controls at correct height . . . Full range of aerial ladder accessories and N.B.F.U.-recommended ground ladders . . . These and many other features fit your requirements perfectly.

***HPV — John Bean High Pressure Fog and Volume Pumps** give custom apparatus the double punch of two great pumps — (1) the Original High Pressure Fog Pump, perfected and made famous by the men of the fire service, with 850 psi pump pressure that gives you the high pressure fog attack that stops fires fast, and (2) John Bean's Class A, Underwriters'-approved centrifugal volume pump that gives you full capacity whenever you need it. Specify both pumps in the unbeatable combination — HPV. Or high pressure fog or volume alone.

Extra Horsepower. John Bean offers you the great 300 hp Waukesha engine to give your custom apparatus extra acceleration and reserve power for any emergency.

Open, Closed or Semi-Enclosed Cabs. John Bean's custom chassis can be built with 3 to 7 man cab design that best fits your preferences and requirements.



For full details and to obtain expert consultation on custom apparatus, contact your John Bean representative or write John Bean. A demonstration of HPV Fire Fighting Effectiveness can be arranged for your community.

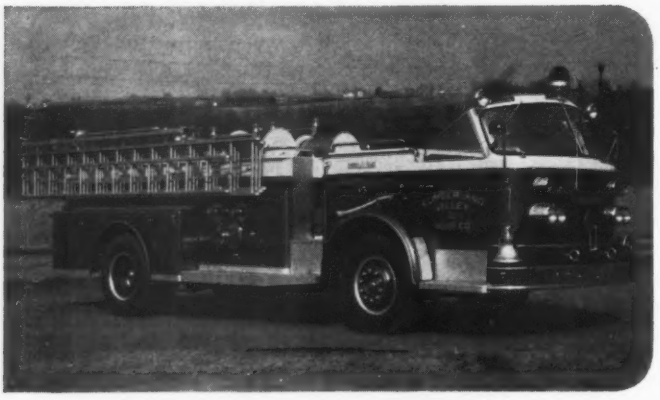
FIREFIGHTING APPARATUS

JOHN BEAN DIVISION

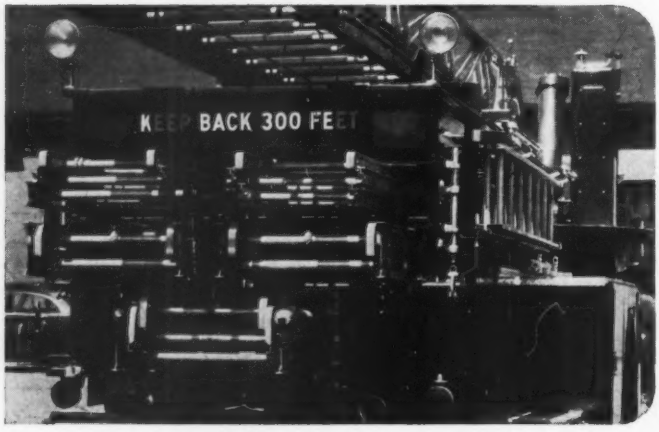
fmc CORPORATION®

Lansing, Mich. San Jose, Calif.

An Alco-Lite 14′ Pumper Roof Ladder and 24′ Pumper Extension Ladder on a 900 Series American LaFrance Pumper.



An Alco-Lite 14′ Pumper Roof Ladder and 35′ Pumper Extension Ladder on a 900 Series American LaFrance Pumper.



This typical nesting of Alco-Lite Ladders on American LaFrance Aerials includes a 24′ Pumper Extension Ladder, 20′ Straight Ladder; 35′ Heavy Duty Extension Ladder, 28′ Pumper Extension Ladder; 16′ Pumper Roof Ladder, 35′ Heavy Duty Extension Ladder, and 50′ Heavy Duty 3 Section Extension Ladder.

Original Manufacturer of Aluminum Ladders

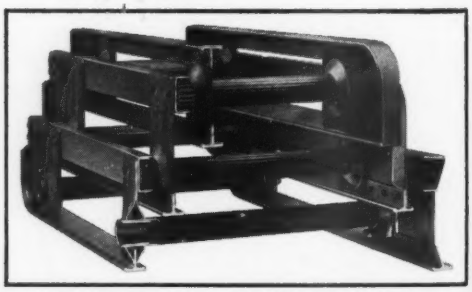
ALCO-LITE

aluminum ladders are standard equipment on these trucks

Alco-Lite Aluminum Ground Ladders are lighter weight . . . easier-to-handle . . . safe. Exclusive gusset plate, expansion bushing construction makes possible the open side rail,T-channel design. Excess weight adding bulk in the side rails is eliminated. More than meet all current tests for strength and safety.

Alco-Lite Aluminum Ladders are unaffected by moisture, water, fumes, gases. Won't warp, rust, rot, splinter, or burn. Almost maintenance free!

Rungs won't twist, turn, or break off. Feature non-slip type corrugations.



Channel slides prevent sections from disengaging. On large ladders, automatic spring loaded locks allow sections to extend, lock, and unlock simultaneously.

Aluminum Ladder Company **ALCO-LITE**

FLORENCE S. CAROLINA

BALL TYPE
VALVE
POWHATAN
RANSON, W. VA.
FASTER
ATTACK
with fast acting ball-type valves . . . quarter turn for full flow, through straight waterway . . . under any pressure . . . built rugged for hard service . . . both types come with either Pin Lug or "Sensible" Lug Swivel. Body painted red.
BALL TYPE
SIAMESE

POWHATAN

BRASS & IRON WORKS

RANSON, WEST VIRGINIA

These Mack Model B-95 1000 GPM triple combination pumpers represent newest acquisitions in Skokie's continuing program of modernization which assures that fire protection will always be equal to the demands of a growing community.

SKOKIE keeps pace by adding Macks

Providing fire fighting facilities to keep pace with a rapidly expanding population is an all-too-familiar problem in towns and cities across the nation. In alert, civic-minded Skokie, Ill., which prides itself on efficient performance of public service, an up-to-the-minute fire department is rightfully a source of community satisfaction.

Reasons for the excellence of Skokie's fire department are not hard to find. An efficient, well-trained professional force of nearly 70 men under the guidance of Chief R. H. Redick . . . a new fire station, so attractive and well designed that it may become a model of its type . . . and a growing list of additions of equipment and apparatus—headed by two new Mack pumpers.

Check leading fire departments anywhere and you'll find Mack apparatus usually rated first. *Custom engineering* is one reason. Mack can deliver the unit that exactly fits your needs; built with Balanced Design—the exclusive Mack practice in which every major component is engineered, manufactured and tested by Mack to work most efficiently with every other component as an integrated unit. *Dependable performance* is the second—and allied—reason. Mack fire apparatus is made to the highest standards in the industry. For sheer dependability, nothing can touch it. For sustained performance, nothing can match it. You can *always* depend on a Mack.

Your nearest Mack branch or distributor will gladly give you full details on the complete line of Mack quality fire apparatus. Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

8967

MACK
FIRST NAME FOR
FIRE APPARATUS

COMPLETE LINE OF PUMPERS . . . 500 TO 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS 65' TO 146' . . . COMBINATION LADDER TRUCKS

Fastest Draw Anywhere!

WHEN IT COMES to a fast draw, podner, you can't beat the performance of a Super Vac. Nossir, not with that new four-bladed propeller that draws out smoke faster than ever before, lets you get right to the heart of that blaze, speed rescue operation, save lives and property, too. Super Vac Smoke Ejectors rid the area of smoke and fumes by the powerful vacuum action from specially designed blades. As a blower, Super Vacs force a tremendous blast of fresh air into the smoke-congested area to reduce combustion and asphyxiation dangers. Fire Departments throughout the United States and many foreign countries depend upon Super Vacs for controlled ventilation and smoke elimination. Don't gamble with safety. Try Super Vac dependable performance.

Compare these features and advantages:

Unique patented perfect spiral air screw—does not chop air like ordinary fans.

No dead spots—creates suction over entire face of housing.

Prolonged motor life—blade forces air over motor surface to reduce motor heat.

New 21% improved four-bladed propeller on all models.

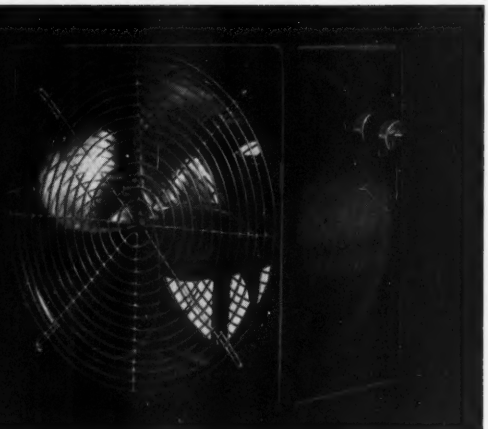
Choice of round or square housing.

Three standard sizes: 12", 16", 24" diameters.

AC or DC, regular or explosion-proof motors.

Running board mounts and hanger unit available.

Choice of red, white, or metallic green baked enamel.

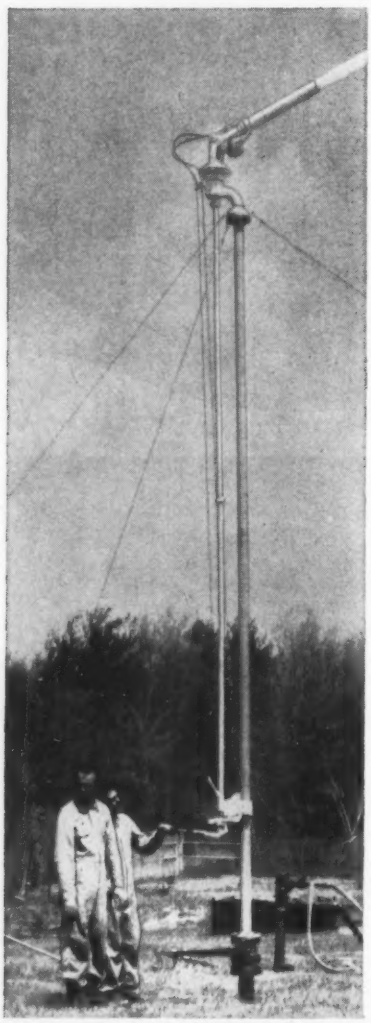


WRITE for new Drill Manual on use of Super Vac Smoke Ejectors.

SUPER VACUUM MANUFACTURING CO., INC.
1055 East First Street / Loveland, Colorado / NOrmandy 7-5146

Fight fires from any angle...
WITH ROCKWOOD SPECIALTY TURRET NOZZLES

Getting The Upper Hand...



Rockwood Extended Manual Control Turrets can be located 10 to 20 feet above a remote control station on the ground. Greater discharge range increases their fire fighting coverage. Higher extensions are engineered for special applications.

On the ground, on trucks, or towering over the flames, Rockwood Turret Nozzles are valuable fire fighting aids for use in refineries and chemical plants.

In fact, Rockwood makes the most complete line of specialty turret nozzles on the market. Every type is designed to fight fire four ways: with solid FOAM stream, FogFOAM, WaterFOG or solid water stream. And all are easily adjustable to meet changing fire conditions.

Throughout the country these Rockwood advancements are proving they can hit fires harder and faster. Find out how well they can protect your own plant. For an illustrated booklet on this complete line, write to Rockwood Sprinkler Company, Portable Fire Protection Department, 445 Harlow St., Worcester 5, Mass.

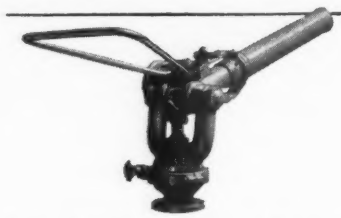
ROCKWOOD SPRINKLER COMPANY

A Division of The Gamewell Company
A Subsidiary of E. W. Bliss Company

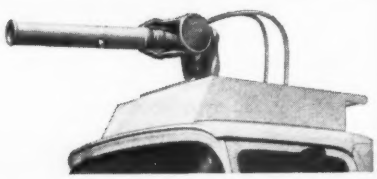
Engineers Water
...to cut fire losses

Distributors in all principal cities

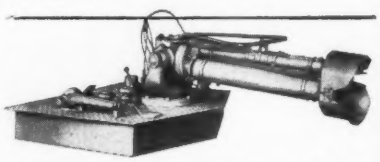
Fighting Fires Four Ways



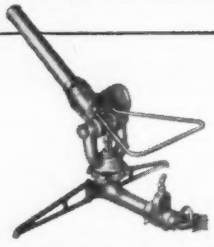
Rockwood Direct Manual Control Turrets give fire fighters "on deck" control from their cab roofs.



A Remote Manual Control Turret is easily handled by a man in the driver's seat. Ideal for fast action.



The Remote Hydraulic Control Type, single or dual model, is power controlled from within the cab. Widely used on crash rescue trucks.



The Portable Type goes off the truck and into action in seconds – wherever hose lines can be brought into action.

BOSTON
Gold Crown
MUNICIPAL FIRE HOSE

WORTH ITS WEIGHT IN GOLD!

ALL-DACRON* DOUBLE JACKET FOR EXTRA DURABILITY

- fine weave 100% Dacron* construction in both jackets
- excellent protection against dragging, banging, any cause of abrasion
- mildew-proof with high resistance to acids, alkalies, other deteriorating chemicals

SUPERIOR EXTRUDED TUBE

Available with Neoprene, rubber or high ozone resistant tube.

ALL-DACRON* DOUBLE JACKET FOR EXTRA DEPENDABILITY

- extremely lightweight, flexible; speedy, easy handling . . . wet or dry
- requires no drying; reduces water absorption problem

YELLOW SAFETY COLOR

Always easy to spot by day or night: on the rack, on the street, or in use anywhere. Another safety "plus" from Boston!

*DuPont polyester fiber.

Don't just spend your hose dollars, invest them! Specify Boston Gold Crown Municipal Fire Hose.

AMERICAN BILTRITE RUBBER COMPANY
BOSTON WOVEN HOSE & RUBBER DIVISION
BOSTON 3, MASSACHUSETTS

BOSTON

INDUSTRIAL HOSE | FIRE HOSE | BELTING | V-BELTS | PACKING | MATTING | TAPE

Choose from Barton-American

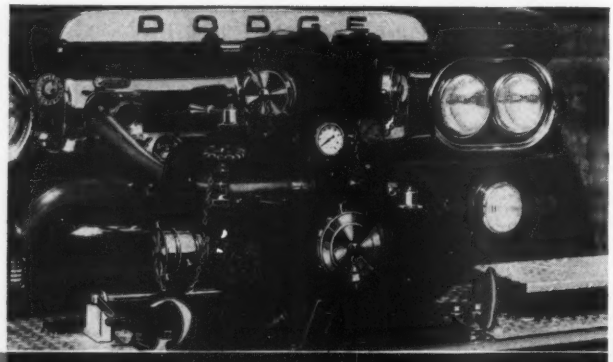
...pumps to meet all your needs...and meet them best

TYPE UA

FRONT-MOUNTED PUMPS
500-750 GPM CLASS "A" RATING

Ample pressure for fog gun operation. Fights fires "on the move".

FULL DETAILS IN BULLETIN 8330-C

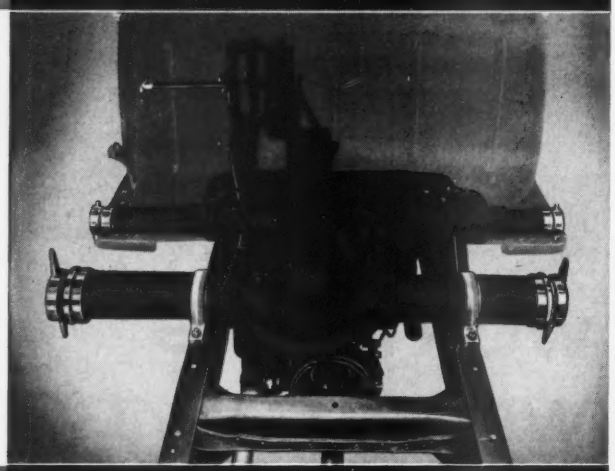


TYPE DMA

TWO-STAGE MIDSHIP PUMPS
500-750 & 1000 GPM CLASS "A" RATING

High pressure for fog gun service.
2 Independent pumps. 3 Pressure & Volume selections.

FULL DETAILS IN BULLETIN 8733



TYPE DMB

TWO, THREE & FOUR STAGE OPERATION

Pressure to 850 Lbs.

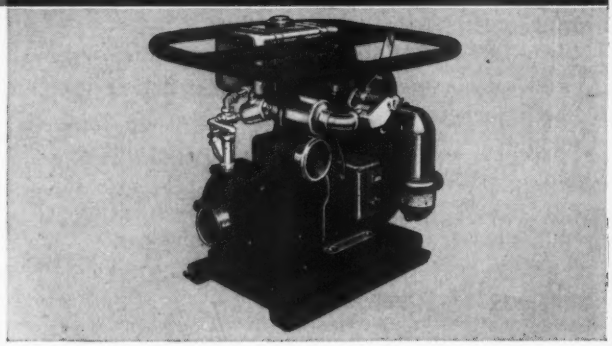
FULL DETAILS IN BULLETIN 8734

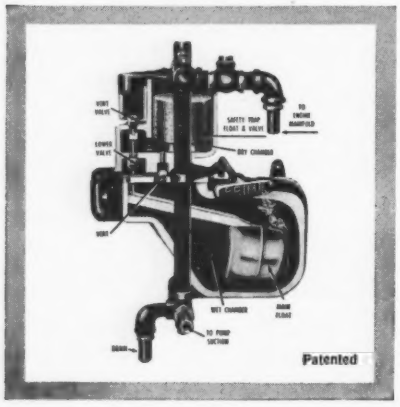
TYPE 3XD

PORTABLE PUMP
200 GPM & UP

Pressure to 90 Lbs.
Weighs only 125 Lbs.
A versatile unit for any department.

FULL DETAILS IN BULLETIN 8120





. . . and the famous Barton-American ENGINE VACUUM PRIMER

REQUIRES NO OIL, NO ADJUSTING, NO MAINTENANCE

Always operates with like-new efficiency—not affected by engine wear.
Employs a simple, trouble-proof principle.
Completely frost-proof. Always dependable.

FULL DETAILS IN BULLETIN 8733

SEE YOUR NEAREST AMERICAN FIRE PUMP DEALER

AMERICAN FIRE PUMP COMPANY

P. O. Box 219-A
BATTLE CREEK, MICHIGAN, U. S. A.

The 1961 S&S Professional Cadillac Ambulance is precision engineered to incorporate every service and comfort feature available through automotive science *and* deliver the finest ease-of-handling on the road today. We challenge you to tell us where this ambulance can be improved! Since it would be impossible to detail every feature even in twice this space, we invite you to write for complete specification sheets. Then you tell us if there is a feature we have missed — or if you agree that the 1961 S&S Ambulance is the finest professional rescue equipment you have ever seen. The Hess & Eisenhardt Company, Cincinnati 42, Ohio.

Is there a feature missing

in this
1961 S&S Professional
Cadillac Ambulance
?

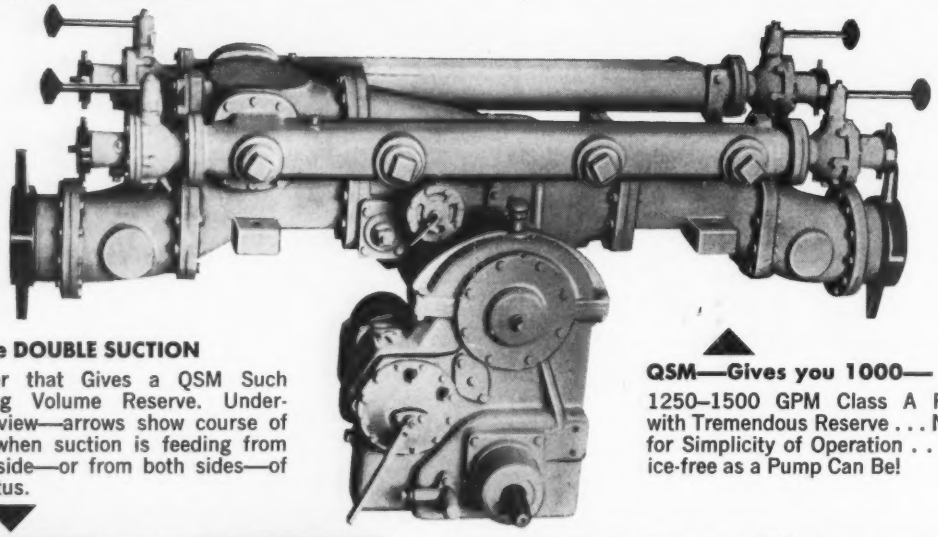
Storage? An S&S has more compartments than ever and not one of them interferes with the largest working area in the industry. And here is the only left-hinged door for convenient curbside loading. Here, also, is a hint of the sculptured-in-steel rear design that is distinctively S&S.

Emergency? Here is big, 5-patients-and-attendant capacity; and a new standard of comfort in the floor length, even-distribution heating system, an S&S exclusive. Here is new convenience with the exclusive S&S Automatic Locking Cot Fastener that does not require moving a hand from the cot.

From the timeless beauty of sculptured styling to the smallest interior detail, an S&S ambulance is the product of 85 years of advanced engineering and dedicated craftsmanship. Only S&S gives you the stability and safety of body-and-chassis "Monotized Construction."

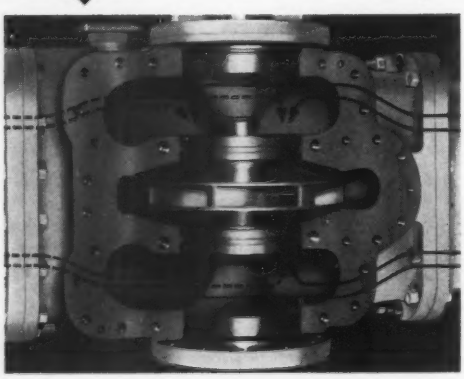
the tradition of leadership... S&S

For "Pouring It On" specify a HALE Single Stage QSM!



It's the DOUBLE SUCTION
Impeller that Gives a QSM Such Amazing Volume Reserve. Underframe view—arrows show course of water when suction is feeding from either side—or from both sides—of apparatus.

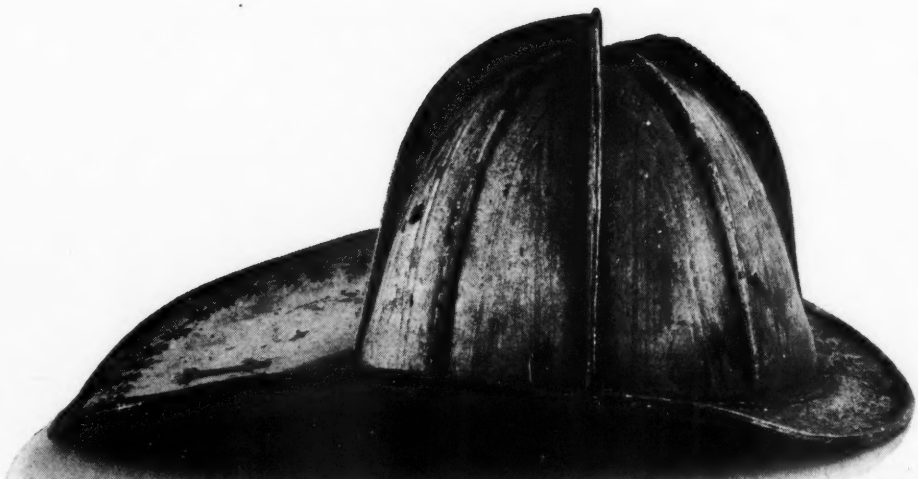
QSM—Gives you 1000—
1250–1500 GPM Class A Ratings with Tremendous Reserve . . . Notable for Simplicity of Operation . . . Service-free as a Pump Can Be!



The HALE Single Stage Type QSM is as far ahead in the Single-Stage class as an Astronaut over a Horse and Buggy!

Write today for new QSM Bulletin #365. Ask, too, for our List of Quality Apparatus Builders using HALE Pumps.

HALE FIRE PUMP COMPANY
Conshohocken, Pa.



THIS HELMET BELONGS IN A MUSEUM

THIS HELMET BELONGS ON YOUR HEAD

Museum piece? Or modern-day head protection? Which one does your helmet most closely resemble?

With the brand new M-S-A® TOPGARD® Fireman's Helmet, there's no question about dependable head protection. It's virtually indestructible. You can bang away at it all day long with a ball peen hammer. But you can't make even the slightest dent.

This new helmet is injection-molded from a new high-impact engineering material: polycarbonate. Combines the impact strength of metal with the natural resilience of plastic.

Compare its remarkable impact and puncture resistance with the helmet you're wearing now. Get acquainted with the material's unusual strength and rigidity at extremely low and high temperatures.

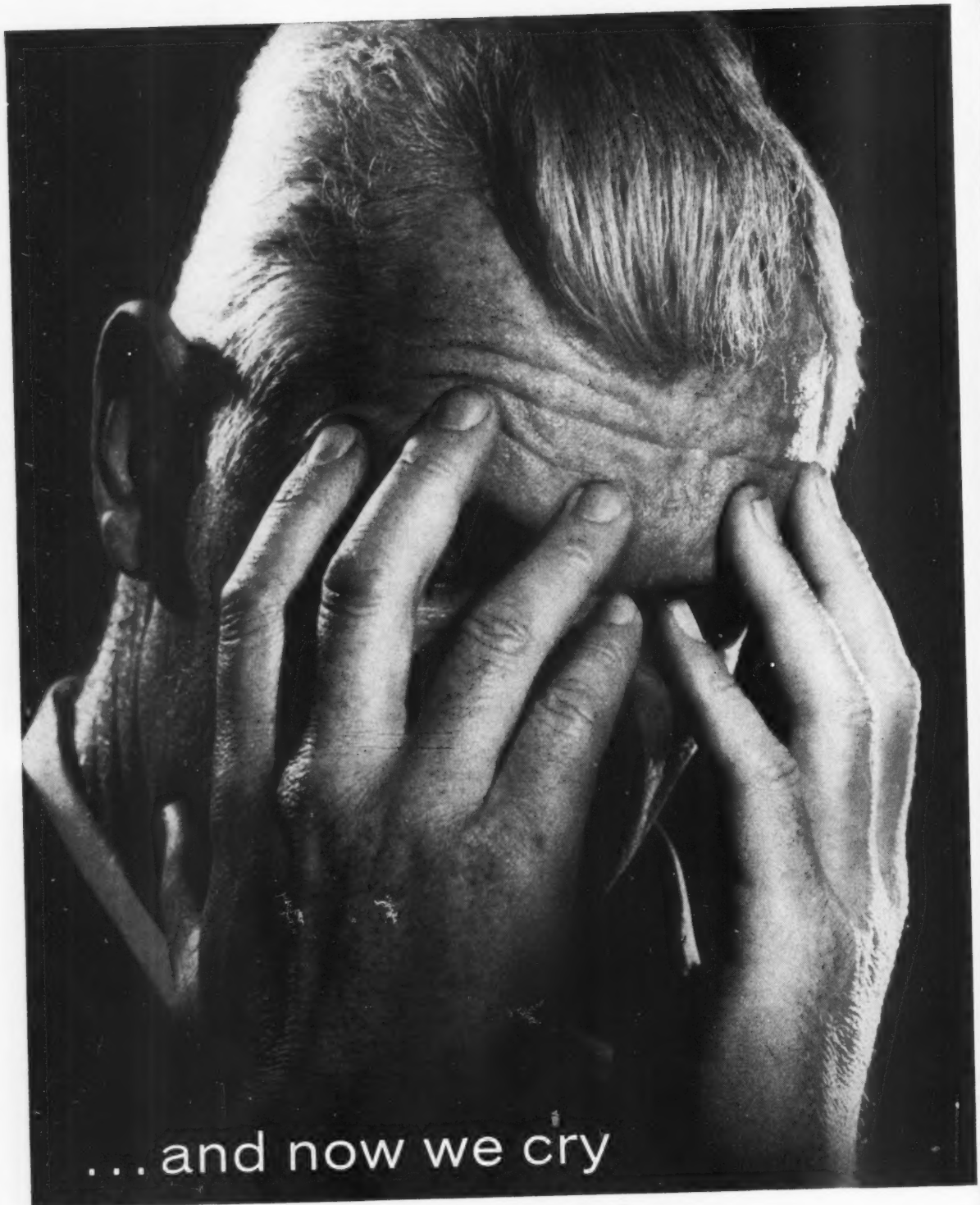
And for firefighters exposed to electrical contact, the M-S-A Topgard has extraordinary dielectric strength.

Perhaps you're already acquainted with MSA's unique doublecradle design: the Fixed-Crown Suspension. There's a permanently fixed upper cradle for tamper-proof safety, an easily adjustable lower cradle for comfort. No pressure points. No protrusions inside. Easy to replace. Easy to remove.

There's no splitting this strong new shell. No brim breakage. And unique uni-ridge styling deflects falling objects. Contrast this with multiple ridge helmets that tend to trap the force from falling objects.

This is the *only* helmet that truly dissipates energy without permanently deforming. Your MSA sales engineer or fire department distributor will be glad to demonstrate the M-S-A Topgard. And write us for new product bulletin.

MSA MINE SAFETY APPLIANCES COMPANY
Pittsburgh 8, Pennsylvania



Where were the voices before this tragedy occurred that are raised in crusade chorus now? Who heard the pleas for better fire protection before this deadly reminder? When will we forget the tragedy that now prompts action . . . the reason now we cry?

Gamewell Master Fire Alarm Boxes can prevent many tragedies. This direct-to-Fire-Department system saves time — and on-time equipment and men save lives and property.

The Gamewell Company offers your community *positive* fire protection, backed by the largest plant in the world engaged exclusively in the manufacture of fire alarm systems and emergency signaling equipment. Your community deserves this proven system. Contact the Gamewell office near you. Safety is everybody's business — *our* profession.

Write THE GAMEWELL COMPANY, 1257 Chestnut Street, Newton Upper Falls 64, Mass. A Subsidiary of E. W. Bliss Company.

BLISS Gamewell®

FIRST...WHEN SECONDS COUNT

FIRE
ENGINEERING
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877
VOL. 114, NO. 11 NOVEMBER, 1961

The Municipal Fire Defense Institute

One of the most controversial subjects to appear on the fire service scene in recent years is the Municipal Fire Defense Institute sponsored by the American Municipal Association. At the recent Las Vegas conference of the International Association of Fire Chiefs, a bitter fight occurred on the convention floor when the Resolutions Committee recommended referral of a Great Lakes Division resolution of nonconcurrence with the Institute to the board of directors for further study. Strangely enough, the institute has not yet begun its active functions and is already being reorganized to be more representative of the parties concerned, with additional fire service personnel included. Whether this action will be sufficient to lessen the tension prevailing among the various fire service organizations is problematic at this time.

Judging from the IAFC membership reaction, there is a widespread lack of confidence both in the expressed objectives of the institute and its sponsor. The more vocal opponents of the institute at Las Vegas charged that its original announcement brochure was deceptive as to true intent and claimed that some city officials who joined the institute over the protests of the fire chief immediately charged the membership fees against the fire department budget. Those chiefs who took a more or less neutral stand stated they felt that city administrators are responsible persons and could join the institute whether the fire service liked it or not. It was pointed out that the fire service should be close to the studies and deliberations of the institute in order to be informed of its actions rather than be in the dark as to its intentions.

A representative of the MFDI dramatically defended its formation and cited the previous lack of interest, understanding and knowledge by city officials of fire problems, even when asked by the fire service for assistance. He warned that now such interest had been aroused it would be foolhardy for fire chiefs to "slap them in the face" by opposing AMA's efforts to help. He stated he was present to indicate a sincere desire to cooperate.

Immediately a representative of the National Board of Fire Underwriters pointed out that cooperation is a two-way street and it cannot be obtained by impugning the motives of one side or the other. He indicated that statements in the MFDI's recently revised bulletin do this in regard to the NBFU, an organization noted for its integrity. He expressed a willingness to cooperate, but felt that the statements of the MFDI were not exactly conducive to such action.

Judging from the reaction to the MFDI, it is evident that AMA missed the public relations boat in its announcement of the institute. Many fire chiefs stated they had received little, if any, information concerning the organization prior to being asked by their city administrators for opinions concerning its value. Others stated they were informed only after the city had joined. Certainly the AMA should attempt to rectify this failure at once, for there is still a large segment of the fire service which is ill-informed of its intentions.

One suspicion expressed at Las Vegas was in connection with the word "economy" as used in the MFDI announcement brochure. To a service which is always beset by economy moves and frequently "false economy," this is disturbing. It is interpreted by some serious fire officials to be just another wedge to force unification of fire and police departments, a condition which is officially opposed by all national fire service organizations with vehemence.

One area which needs to be carefully handled lest any scandle arise is the matter of "dues." It is also at this point that arguments against opposing the institute falter. For while the AMA is an independent organization and can do as it pleases in regard to its internal policies without fear of contradiction by the fire service, it must not forget that the monies it seeks for the MFDI are public funds provided by taxpayers of participating communities. This at once includes firemen and imposes a responsibility that cannot be ignored. The membership fees are substantial and could well run into many thousands of dollars. Economy of operation in this area will be closely scrutinized by all interested parties.

Fire Engineering takes the position that it will judge the institute solely on its accomplishments as indicated by its record and official reports as its work progresses. We do not presume to tell the AMA how to conduct its affairs, but we do reserve the right to praise, criticise or condemn as the facts may dictate in the future. We also express the hope that this interest on the part of a leading organization of municipal officials will eventually forge a genuine foundation of understanding between it and the fire service which has for too long been on a poor-relation basis.

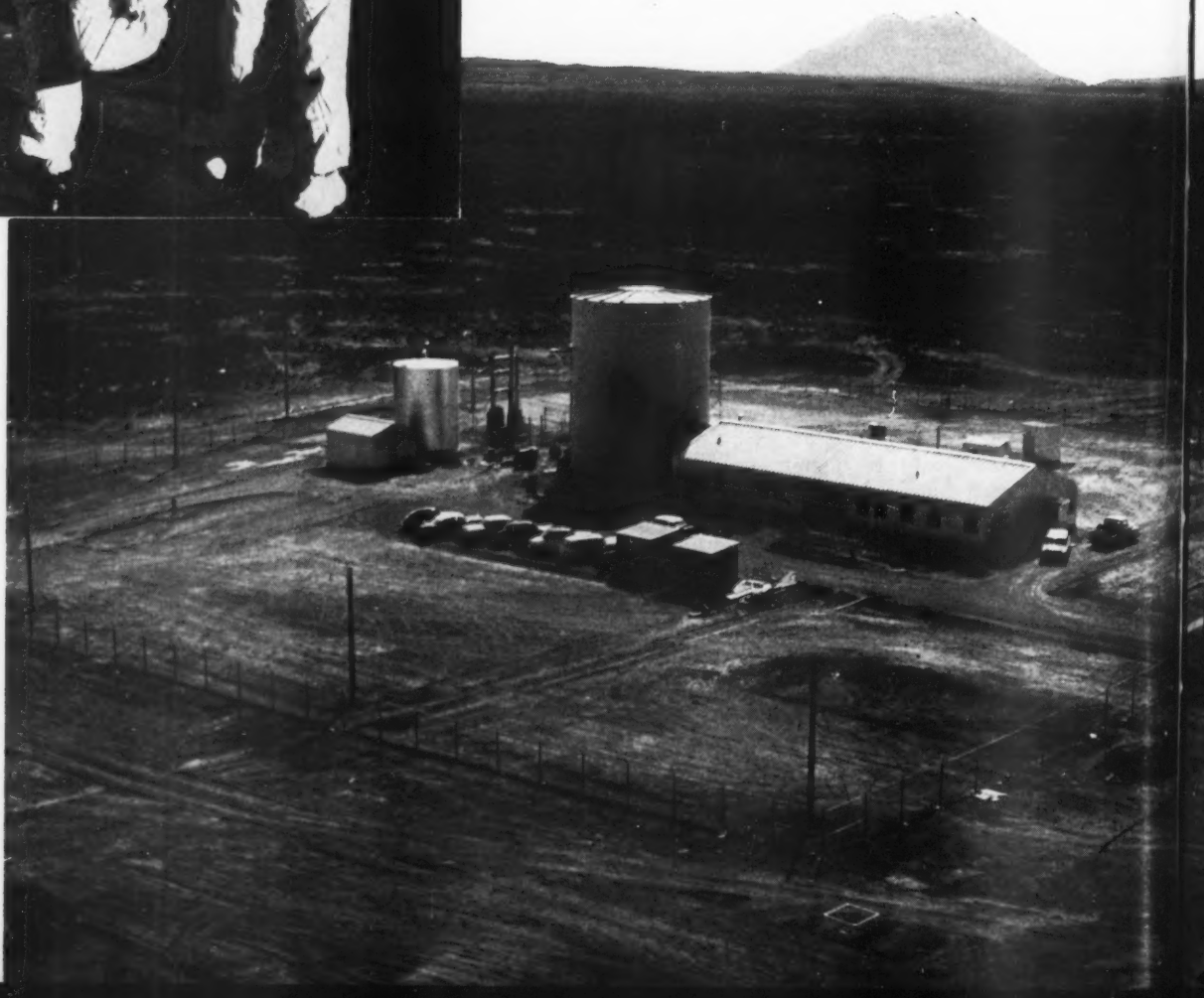
Hlow O'Brien

Below, a radiological safety crew member of the Idaho Operations Office of the AEC is monitored for radioactivity following the post-incident clean-up work at Stationary Low Power Reactor No. 1

Right, view looking west at the junction of U. S. Highway 21 and SL-1 Reactor road showing emergency command post, fire truck and other equipment assembled following the January accident (FIRE ENGINEERING, *August 1961*)

Aerial view (bottom) shows SL-1 Reactor and office buildings at testing station in Idaho

Training for nuclear ac



ear accidents

National Reactor Testing Station Fire Department employs instructional material which is available to all

By R. J. BEERS
*Fire Protection Engineer**

E. G. DINGMAN
*Fire Department Drillmaster**

**Hazards Control Branch*
Health and Safety Division
Idaho Operations Office
United States Atomic Energy Commission

THE NUCLEAR ACCIDENT, which fatally injured three men at the National Reactor Testing Station (NRTS) near Idaho Falls, Idaho, early this year, clearly demonstrated the value of previous fire department training. One could only speculate what may have happened had a crew of firemen, untrained in radiation safety, responded to a nuclear incident of this magnitude. It is very likely they would have entered the building without breathing protection since there was no evidence of smoke or fire. Without knowledge of radiation survey instruments, and no professional assistance immediately available, blind entry into high radiation fields could have easily occurred. It would have been natural to take whatever time and action necessary to remove all victims, even though two were already dead and one died very soon after the accident.

Additional time may have been taken to make a thorough investigation inside the reactor building. Such action would have resulted in high radiation exposures for most, if not all, of the emergency crew. Depending on the length of time in the building, such exposures could have caused radiation sickness that could have been serious enough to be lethal. Inhalation of radioactive material from the air inside the building would have been an additional serious hazard. Spread of radioactive contamination across site roads to other facilities would have undoubtedly been a problem. These problems were all averted by proper procedures. The highest radiation exposure received by firemen was well below the quarterly exposure guide recommended by the Federal Radiation Council and the spread of contamination was kept to a minimum.

The first radiation training for NRTS Fire Department personnel was received by the fire department drillmaster who attended the AEC "Radiation Hazards in Fire Fighting" Instructors' Course at the University of Maryland in April 1957. Developed and presented by Francis L. Brannigan, AEC Safety and Fire Protection Branch, Washington, D. C., the course is a practical approach to the understanding of radiation hazards as they apply to fire fighting. It is intended for laymen, rather than those technically trained, yet encompasses sufficient detail to assist most fire department personnel in coping with radiation hazards as one might find them at the scene of an emergency. Upon completion of the course, the drillmaster initiated radiation safety training at the NRTS Fire Department in June 1957. Atomic Energy Commission pamphlets "Living with Radiation, Issue No. 1—Fundamentals," by Francis L. Brannigan[1] and "Living with Radiation, Issue No. 2—Fire Service Problems," by Francis L. Brannigan and George S. Miles[2], have been used as text material for the course. It is our feeling that the abovementioned course and text material provided basic training of invaluable assistance to NRTS firemen in coping with the radiation hazards at the SL-1.

Drill field training

In addition to classroom training, the fire department was given drill field training, including such features as practice in donning protective clothing, control of spread of contamination, procedures for approaching and entering radiation fields and contaminated areas, proper removal of contaminated clothing, use of radiation detection instruments, and other pertinent radiation safety practices.

Prior to the SL-1 incident, all fire department officers attended a "Radiation Monitoring Training Course," presented by NRTS-AEC Health Physics personnel. Material in this course was integrated into fire department training programs.

The NRTS Fire Department assisted in making a 16 mm movie film, "Fire Fighting in the Nuclear Age," during 1959. The planning and training necessary to develop this film provided a better understanding and knowledge of radiation problems and their solutions.

Routine training had included prefire planning for specific plant areas for many years. Officers, and frequently fire department crews, make routine acquaintance tours through each facility. Classroom discussions after the tours include location of anticipated high radiation fields, contaminated areas, and other radiation problems.

Continued on page 1011

Los Angeles City fire fighter is rescued from mezzanine of supermarket during blaze. Bars on windows had to be pried loose before the trapped men could be released

—Official L.A.F.D. photo by Manwarren

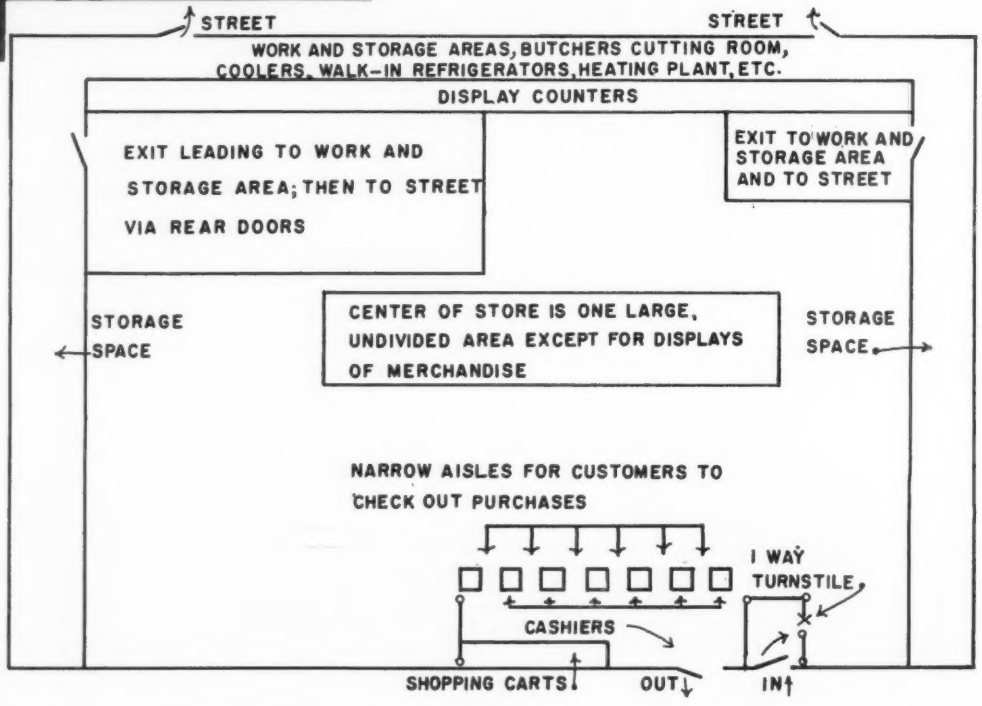

STREET
STREET
WORK AND STORAGE AREAS, BUTCHERS CUTTING ROOM, COOLERS, WALK-IN REFRIGERATORS, HEATING PLANT, ETC.
DISPLAY COUNTERS
EXIT LEADING TO WORK AND STORAGE AREA; THEN TO STREET VIA REAR DOORS
EXIT TO WORK AND STORAGE AREA AND TO STREET
STORAGE SPACE
CENTER OF STORE IS ONE LARGE, UNDIVIDED AREA EXCEPT FOR DISPLAYS OF MERCHANDISE
STORAGE SPACE
NARROW AISLES FOR CUSTOMERS TO CHECK OUT PURCHASES
1 WAY TURNSTILE
CASHIERS
SHOPPING CARTS
OUT
IN

Diagram 1

Effects of supermarket construction

By CHIEF EMANUEL FRIED

Hinsdale, Ill., Fire Department

Fire fighting in supermarkets is a difficult task for even the best equipped and trained fire departments. In this article the author states some of the reasons which result from the construction methods employed. The material is intended as a supplement to a previous article on "Fire Fighting in Supermarkets" in the September-October 1961 issues of FIRE ENGINEERING. Fire prevention in these occupancies will be covered in a subsequent article concerning "Inspection of Supermarkets."

The Editor

MODERN SUPERMARKETS range in area from 10,000 square feet on up, with unbroken floor space. They are usually one-story without cellar, built on concrete slabs. The exterior walls, except for the front of the store, are of cinder or concrete block with brick veneer. Solid brick construction is sometimes employed for rear and sides, where the store is a separate structure. If the store is part of a group of other stores, the side walls may be of cinder block. These then act as a common party division wall.

Should the market be a separate structure, the only openings found on the side walls will be the service doors, small toilet windows and louvered openings for ventilation of the refrigeration machinery room. These are located towards the rear. If the store is part of a group of stores, these openings will be on the rear wall. This is the reason why ventilation and advancement of lines are such difficult problems in these stores.

The entire front is a show window. Entrance and exit may be at one point, or at two widely separated points. There may be additional emergency exits, but these are generally located in the service area and are not, as a rule, satisfactory (Diagram 1).

This type of show window construction entails long lengths of steel I-beams supported on Lally columns at the center portion of the span and

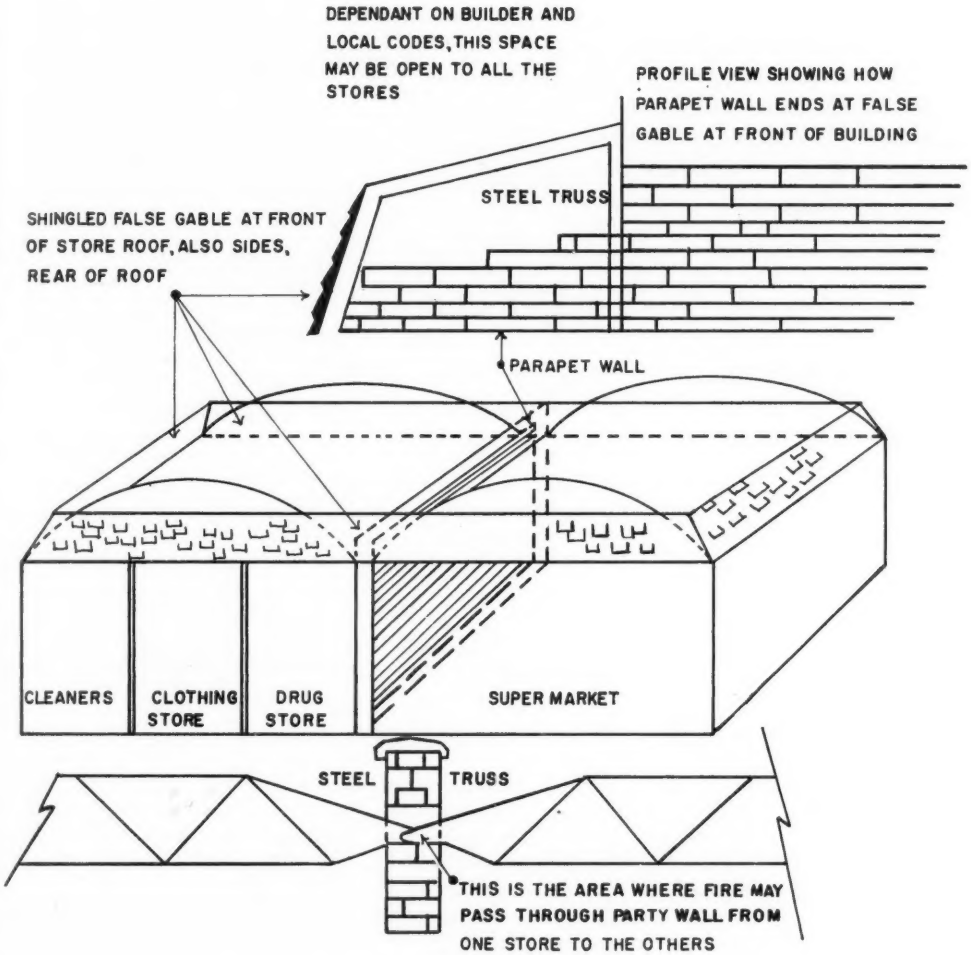

DEPENDANT ON BUILDER AND LOCAL CODES, THIS SPACE MAY BE OPEN TO ALL THE STORES
PROFILE VIEW SHOWING HOW PARAPET WALL ENDS AT FALSE GABLE AT FRONT OF BUILDING
STEEL TRUSS
SHINGLED FALSE GABLE AT FRONT OF STORE ROOF, ALSO SIDES, REAR OF ROOF
PARAPET WALL
CLEANERS
CLOTHING STORE
DRUG STORE
SUPER MARKET
STEEL
TRUSS
THIS IS THE AREA WHERE FIRE MAY PASS THROUGH PARTY WALL FROM ONE STORE TO THE OTHERS

Diagram 2

on fire fighting operations

on the side wall at the ends of the building. In order to conceal the steel work and make an attractive store front, there is much wood framing, with resultant hollow spaces between the exterior and interior. The steel is usually unprotected and constitutes a serious defect. An ornamental facade of brick rising above the roof is often superimposed on the steel, and is unsupported. If there is any shifting of the I-beam, the brick work may come crashing down.

Roofs in general

Due to the large unbroken floor area and the desire to avoid partitions or columns on the floor, the roof must be of truss construction. Where the span is excessive, the truss must have support and this takes the form of a massive steel girder running from the front to back wall. Because this girder is very long, it may require support columns.

Trusses are sometimes constructed of wood, but steel is most common. Naturally to gain comparable carrying capacity, wood members must have far greater bulk than steel. Where both are comparable in strength, and the steel unprotected, the wood member will resist fire better. Unprotected steel actually gains in strength up to about 400 degrees F., but beyond that, it loses strength rapidly. At 1,100 degrees, total collapse of the roof structure can be expected. Prior to reaching this temperature, there will be expansion of the steel members.

Steel expands about 1 inch per 100 feet of length per 100 degrees F. A steel beam 100 feet long at 1,000 degrees will expand about 10 inches. This is enough to push walls out to the point where structural stability is endangered. Should highly heated members be suddenly struck by a hose stream, there will be a sudden contraction of unequal proportions, with possible collapse of the building. Where girders are supported by unprotected cast iron columns, the danger is far greater. When steel begins to fail, it shows signs of settling. The failure of cast iron is sudden and com-

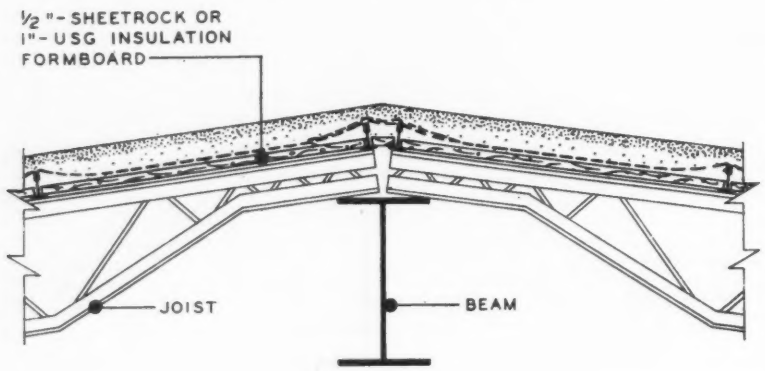


Diagram 3

plete. Trusses are interdependent on their structural parts. If several parts of a truss are burned through or weakened, the entire span may be in danger.

Ceiling joist and truss

A newer steel member which acts as a ceiling joist and truss is becoming quite common in supermarket construction (Diagram No. 3). It is light in weight and comes in ready-to-use-form. These joists support both the roof and ceiling.

In construction, slabs of insulating material, some of combustible nature, are laid directly on top of the steel joist. These insulating slabs act as form boards for gypsum concrete which is poured from 2 to 3 inches thick over 12- and 14-gage loosely laid wire mesh. Over this is an ordinary tar-felt and tar-and-gravel roofing mixture which acts as waterproofing.

On the underside of the steel joist are 2 by 2-inch wooden strips fastened by wire clips. These 2 by 2's (about 2 feet on centers) have 1-inch furring strips of wood nailed to them crosswise to form a 2-foot-square box pattern. The furring strips act as nailing supports for a metal ceiling.

Sometimes fiber-base ceiling tiles are employed. While the metal is not combustible and the ceiling tile has a rather rapid flame spread, it is difficult to say which is the more hazardous. With a hot fire below, it won't take many minutes for the fire to get through the metal ceiling via heat conduction into the space above. In addition, as soon as the wood furring strip burns through, pieces of the metal ceiling, with razor-sharp edges, will begin to drop. On the other hand, the combustible ceiling tiles will add fuel to the fire, spread rapidly along the face of the ceiling and will fall as soon as the wooden furring strips burn through. Both are very undesirable as fire-protective features.

The exterior gypsum roof is substantial construction. In itself, the material is noncombustible (except for the tar-felt covering and combustible insulation below, if used). The gypsum covering can be cut quite readily with standard fire department tools (axes, saws, mauls) for ventilation or insertion of cellar nozzles.

An interesting aspect of roof fire fighting is presented. Will enough heat from a fire get through the insulating boards and gypsum concrete (a total of about 5 inches) to guide the men on the roof? The old familiar signs of melting tar, dry spot or steaming in the rain, melting snow, or feeling for the hot spots, may not show with this insulating factor. In time, the heat will show but this may take too long. The steel joists may be seriously weakened by then and collapse of the roof structure imminent. This can be dangerous to fire departments. Men sent to open roofs may sense no peril until it is too late.

This insulating factor has a double disadvantage. While it may be difficult to determine the hot spot on the roof, the heat inside the hanging ceiling cannot dissipate as readily as it did with the conventional roof. First, no one may discover the fire until the roof collapses, should it occur during the night in a deserted section. Second, where formerly the fire burned through the wood sheathing and vented itself, or the heat was partially absorbed by surrounding surfaces, now the heat may concentrate against unprotected steel joists and failure occur more quickly.

Another type of roof support may eliminate many of the evils of the hanging ceiling and truss construction. This is the laminated-wood arch. These are not anchored on the side walls of the building but on concrete bulkheads at ground level. The side walls of the store are built around or just inside the bulkheads. These great arches are ornamental in appearance, and are designed to form part of the finished ceiling. As a rule, this construction is sprinklered. The absence of hanging ceilings, plus automatic sprinkler protection and protected structural members, should go a long way towards correcting fire fighting problems in supermarkets.

Roof (stores each side)

Dividing or common party walls of cinder or concrete block are an excellent fire stop unless there are communicating doors. There is the possibility of heat communication through the party walls, but this can easily be coped with by moving exposed stock.

The most likely means of fire communication is the ceiling space. Good construction dictates that party walls be carried through the roof and end in a parapet about 2 feet above. Ceiling joists rest on the party wall, but unless the joists abut each other in an overlap, there will be no place for fire to pass through from one store to another. The only other way fire can extend is through openings made in the wall for electric conduit, piping, air-conditioning ducts, etc. In the event of shifting or partial collapse of ceiling joists, a common party wall may be pushed or cracked enough to permit a block to dislodge, leaving an opening for fire to get through.

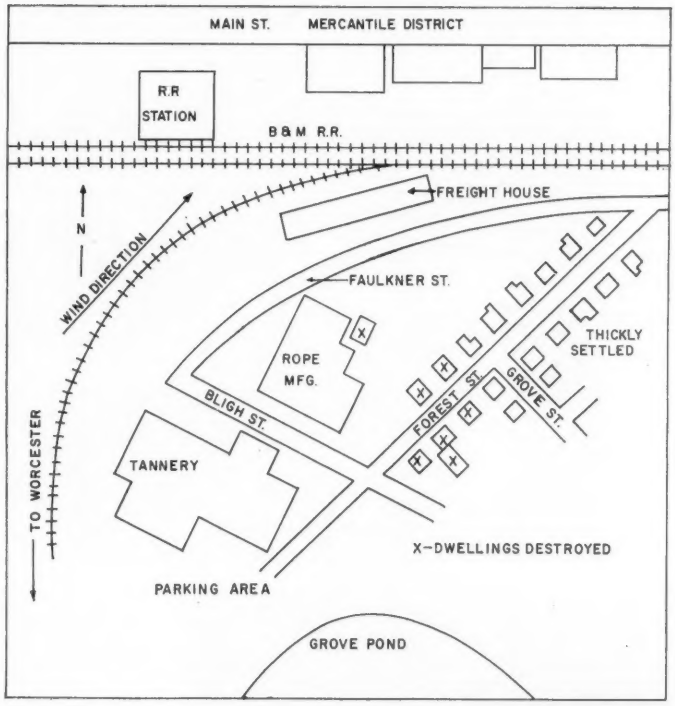
It is true that fires have burned through roofs and extended over parapets to involve adjoining roofs. This is not necessarily a defect in construction, but may be due to poor fire operations. Protective lines should cover adjoining roofs long before this occurs. Where there is suspicion that fire has entered the roof space, adjoining spaces must be checked for extension. It is better to put a small hole in a ceiling, which may turn out to have been unnecessary, than to take a chance and lose a group of stores.

Sometimes fire fighters discover peculiar roof features. A store may have a flat or truss roof. However, in order to conform to neighborhood appearance, a false gable may be built up at the front and sometimes at the side of the store. The party wall between the market and adjoining stores is

Continued on page 1006

Entire town threatened by $4-Million blaze

By HENRY T. HANSEN



Hartnett Tannery Co. Buildings, windward side, about an hour after start of fire. Nine buildings were destroyed before blaze was controlled

A $4,000,000 FIRE on June 5 struck the Town of Ayer, Mass., completely destroying two manufacturing plants and seven dwellings. Eleven families were left homeless and minor damage was caused to scores of other homes, a church and the town hall.

The fire started in the spray room on the fourth floor of the Hartnett Tanning Company, the main building of which was of five-story wooden frame construction. In the spray room treated hides were sprayed with a lacquer prior to the final finish buffing. No workmen were in this part of the building at the time of the outbreak. There were, however, about 70 men working on the second shift on the lower floors.

As the day had been quite warm, despite a brisk breeze, many of the windows of the plant had been left open. This condition permitted the wind to carry flames out the windows, igniting the outside of the building where operation of the sprinkler system had no effect.

An automatic sprinkler alarm was received at fire headquarters and sounded simultaneously on the outside coded whistle at 6:17 p.m. The Ayer Fire Department personnel consists of a chief with two assistants and 30 men, all on a call basis. Three permanent drivers are employed, one being on duty in the station on each of three shifts. Equipment consists of one 1,000-gpm pumper, one 500-gpm pumper, a forest fire truck, a service ladder truck and an ambulance. Response to the alarm was prompt as the run was but a short distance and most of the call men were nearby at that hour.

Shortly after the arrival of the first fire company, several explosions occurred in the spray room. These were of sufficient force to rupture sprinkler lines and spread the flames. As most of the windows that were not already open were blown out, the wind which had increased in intensity, swept the flames from end to end of the fourth floor. At this point, all thought of fire department operation inside the building was out of the question. The lines that were operating were pulled back and an attempt was made to cover exposures. This proved futile.

Calls for assistance

In the meantime, Chief George L. Donahue had sent out calls for assistance to all departments within an approximate 15-mile radius. Responding were companies from 24 departments, the greatest concentration of apparatus ever assembled in this part of the state. Included were: Lowell, Chelmsford, Townsend, Shirley, Harvard, Clinton, Lancaster, Leominster, Fitchburg, Lunenberg, Bedford Air Base, Concord, Acton, Fort Devens, Westford, Groton, Pepperell, Lexington, Arlington, Dunstable, Tyngsboro, Littleton, and Nashua, N. H. Boston sent three engine companies and two civil defense units on the 36-mile run.

Within a half-hour of the first alarm, the tannery buildings were completely involved and starting to collapse. The intense radiant heat and heavy flying brands involved the International Purchasing Co. buildings directly across Bligh Street. These buildings were also of wood-frame construction, the main factory being of four stories with attached storage sheds of lesser height.

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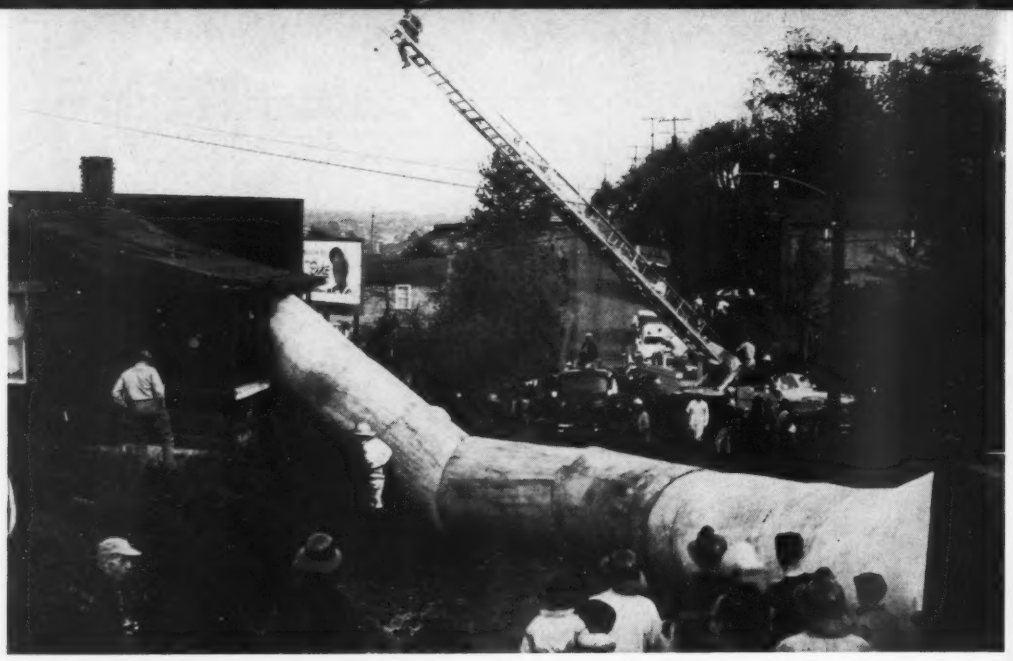


Blower fan provides energy to transport foam through the fabric conveyor tube into structure to be flooded. Scene is test fire building before ignition

All photos by S. Smeltzer, Greensburg F. D.

Foam-producing equipment is mounted on small truck. Mixture of foaming agent and water is sprayed on specially knitted nylon screen where it is blown into a mass of bubbles

Novel fire extinguishing technique employs high-expansion detergent foam

Unique method borrows tactics recently developed for fighting coal mine fires

By CHIEF J. EDWARD HUTCHINSON
Greensburg, Pa., Volunteer Fire Department

HIGH-EXPANSION FOAM is a new tool which can be used in combatting hard-to-control fires. Called Hi-Ex, it is a system for the production of 1000:1 expansion foam in tremendous volumes. The unit now in service in the City of Greensburg is capable of producing 90,000 gpm of foam (about 12,000 cubic feet per minute). One unit has been constructed which has a capacity of 375,000 gpm (50,000 cfm). Such volumes of foam can be used to totally flood a structure involved in fire. The equipment has the ability to fill a building and drive it up stairs or elevator shafts to reach other floors.

The foam acts as a stabilized fog. A mass of bubbles is used to transport water to the fire area, where heat vaporizes the thin film of the bubble structure, providing dilution of the atmosphere with steam. As the mass of bubbles covers the area, it provides a blanket around the fire and drops its moisture on the hot material, cooling it as long as heat remains.

Fire department personnel do not have to enter the fire area to apply the foam. It can be introduced into a building at any convenient opening. Anyone who may be trapped within a building will be relatively safe within the mass of foam as it is about 99.9 per cent fresh air.

Test fire building after ignition. Greensburg firemen stand by with safety hose lines ready to flood structure with foam

Foam overflow spreads into street from flooded building where fire has been controlled

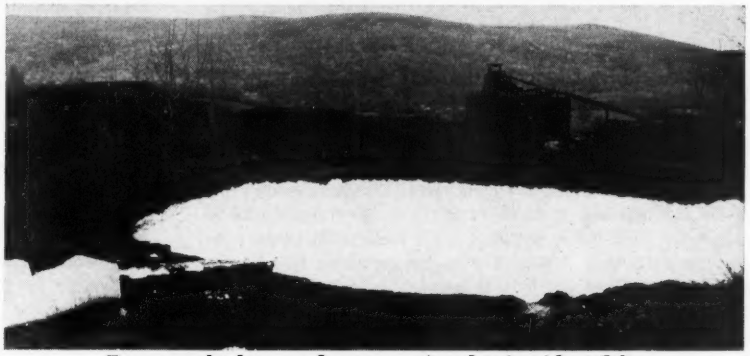
The system has proved effective against large rubber tire fires and flammable liquids as well as wood and other ordinary combustible materials. The foam may not completely extinguish a deep-seated fire, but it will check its spread until it can be approached and put out. Water damage is minimized because of the relatively small amounts of water used and contained within the foam. The foam may be dissipated with a fog nozzle or may be allowed to break down naturally.

Suggested uses

A few suggested uses are: Basement fires, paint and other flammable liquid storage areas, rubber products storage, large open areas where roofs are flat and walls prevent access such as in supermarkets or bowling alleys, large involvements of factory floor areas, flammable liquid spills on the streets or rivers, in diked areas around fuel storage tanks, ships and harbor fires as well as dock fires.

The Greensburg Volunteer Fire Department has cooperated with Safety Development Corp. in developing this system and is the first department to possess such equipment for use outside of coal mines where it has been in effective service for many years. □□

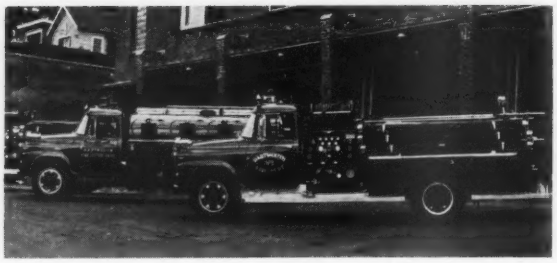
Demonstration of method's ability to extinguish large oil spill fire. Foam is just beginning to be discharged. The system is also effective on Class A materials



Foam completely covers large open pit and extinguishes oil fire

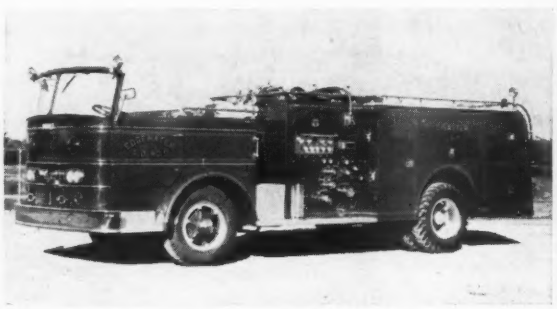
Recent apparatus

Erie Hose Company No. 1, Susquehanna, Pa., recently took delivery of this rescue unit built by the Reading Body Works, Inc. It features a welded unit body and carries portable lighting equipment, welding and cutting equipment, oxygen tent and resuscitator, demand masks and Indian tanks

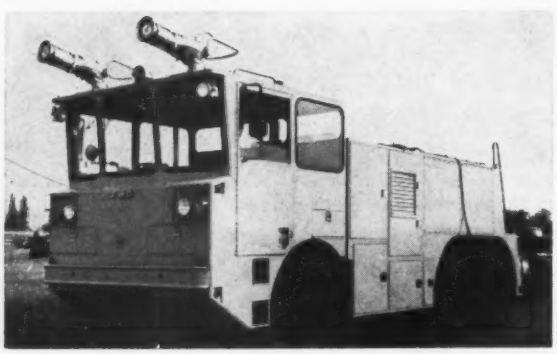


Dartmouth, Nova Scotia, Canada's newest city, recently added these three units. The two 625-Igpm pumpers were built by American Marsh Pumps, Stratford, Ont., while the 1,200-gallon tanker (center) was built by LaFrance Fire Engine and Foamite Ltd., Toronto. All employed International Harvester B180 chassis with V-8 engines—G. E. Wood photo

London, U. K., recently bought eight specially designed Merryweather Marquis pump escapes. Powered by 130-hp engines, they mount midship pumps rated at 675 igpm at 150 psi



Howe Fire Apparatus Co. recently delivered this Defender disaster unit to the Edgewater, N. J., Fire Department. Powered by a 300-hp Waukesha engine, it mounts a Waterous electromatic and manual 750-gpm pump and a 7½-kw Onan generator on a PTO. Ladders and hard suction are under the hose bed



FWD Corporation recently completed this MB-1A crash truck for the U. S. Navy. The 6 by 6 unit is powered by a rear-mount 340-hp Continental engine through a Dana torque converter transmission. It carries 1,000 gallons of water and 65 gallons of foam liquid with a Cardox main foam pump powered by a Chrysler 160-hp V-8 engine supplying two Cardox foam turrets. Hand line foam is supplied by a 100-gpm Waterous PTO pump. An Ansul 400-pound Purple-K dry chemical unit is pressurized with nitrogen for hand line discharge. Cab and body employ welded aluminum frame and aluminum skin

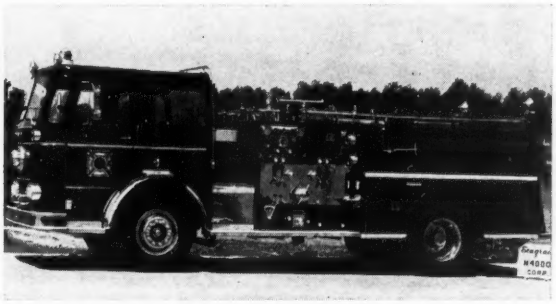
Recently delivered to the Albuquerque, N. M., Fire Department is this Christopher Co. "F.A.P.A." four-in-one unit. Equipped to carry four stretcher patients, together with oxygen supply, resuscitators and other first-aid supplies, it also mounts a 200-gpm pump plus booster line and 1½-inch hose, 150 gallons of water, and a stainless steel foam tank with a proportioning system. Equipped with portable generator, portable pump and rescue tools, it seats 12 men

introductions and deliveries

Automotive Conversion Corp. has announced its 1962 Amblewagons designed for fire departments and rescue squads. All are available on practically any American station wagon as well as some "compacts." Reconversion to regular station wagon is said to be easily accomplished

Marshall, Okla., recently acquired this rural area and grass fire unit built by the Zeligson Truck & Equipment Company of Tulsa, on a four-wheel drive, factory-processed government surplus cab and chassis. It is powered by a 261 Chevrolet engine and mounts a UA-50 front-mount 500-gpm Barton-American pump and a 500-gallon booster tank

The Challenger Corp., Memphis, Tenn., recently designed this two-patient ambulance on a Chevrolet chassis. It is designed for use by fire departments and first-aid rescue squads



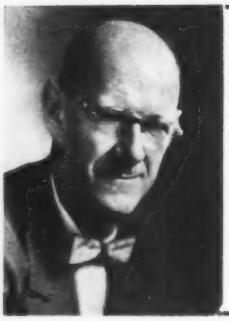
The Seagrave Corp. displayed this "parade" 1,000-gpm pumper at many eastern fire service conferences during the past summer. The unit features chrome "scuff" plates and hub caps, chrome-plated Hannay hose reels, stainless steel running boards and aluminum engine hood. It is powered by a 251-hp V-12 engine through a Clark Transverter semiautomatic transmission and torque converter

The First Volunteer Fire Co. of Bergholz, Inc., near Niagara Falls, N. Y., recently added this 1,000-gpm American LaFrance pumper. Powered by a 275-hp engine, it mounts a 750-gallon booster tank and can discharge "wet" water or foam through a rear 1½-inch preconnected line by means of a permanently mounted Akron by-pass eductor. A Penetrator electronic siren mounted on the cab roof also serves as a public address system and radio amplifier speaker

Ann Arbor, Mich., recently acquired this new rescue unit built on a Chevrolet chassis with automatic transmission and power steering. It carries a 100-gallon water tank, an American La-France high-pressure pump, John Bean high-pressure nozzles and a large amount of rescue tools and equipment

Economic theory vs. practical service in fire-police integration

The viewpoint of a fire protection engineer as expressed to insurance executives



By DALE K. AUCK

The author is director, Fire Protection Division, Accident and Fire Prevention Department, Federation of Mutual Fire Insurance Companies. He is a member of the qualification board, Society of Fire Protection Engineers, and a former member of the board of directors, National Fire Protection Association.

This article is a condensed version of "Mutual Interest Bulletin, No. 34" published by the Federation for its member companies.

MANY MUNICIPALITIES are today using the services of full-time city managers or civic administrators to operate the city's services efficiently and thus secure a better return on the tax dollar. In principle, this is meritorious. As a town approaches 35,000 population, its annual budget becomes a million-dollar operation. This is too large an amount to be expended piecemeal by city officials who must be gainfully employed elsewhere for their livelihood and who thus can serve the town only part-time. "Economy of operation" is the basic criteria of administrators.

Salaries of municipal employees comprise the major portion of a town's budget. Hence many administrators try to reduce the number of "bodies" on a payroll by combining jobs without sacrificing services. Again, in principle, this is meritorious. But it has resulted in some locales in the integration of police and fire departments with a total unawareness of the requisites of good police and fire department service duties. In actual practice, more emphasis is placed on "bodies" and "dollars" than on "service."

The general theory is as follows: Police in squad cars are furnished fire protective clothing and a few hand fire extinguishers. The forces at fire stations are reduced to merely enough men to drive the apparatus. When a fire alarm is received, it is radioed to the police cars who converge on the address. Since they are mobile at all times within the fire district, it is "presumed" they will get there before the fire apparatus arrives. By thus being at the fire so quickly, it is argued that police will have the fire put out most of the time before firemen arrive. Further, firemen at their stations are asked to act as file and record clerks, wash cars, make minor repairs, clean cells, etc., when they are not actually engaged in fire fighting.

This is a nice theory. It reduces the number of "bodies" on a payroll, predicated on the assumption (prevalent with laymen) that firemen are idle at all times except when at fires. It ignores the basic principle that fire prevention services are equally important to a taxpayer as is fire extinguishment. It ignores the fact that police cars may be farther away from a fire than the firemen when an alarm is broadcast.

There are many reasons why police-fire integration is fallacious thinking and, in reality, is a real "disservice" to a community. Foremost is the fact that while police are fighting fire, the town's businesses are unprotected against criminals and the town's traffic is not controlled, with resultant possible increase in life and property damage. A false alarm turned in by a member of a possible gang can "clear the site" of an imminent robbery by sending police to the opposite side of town.

This is not mere conjecture. Not long ago it was reported that in St. Hyacinthe, Quebec, Canada (20,000 population), a gang of six robbers set two buildings on fire in a far part of town. While the integrated fire-police forces were handling these fires, the robbers took $130,000 from the District Credit Union building downtown.

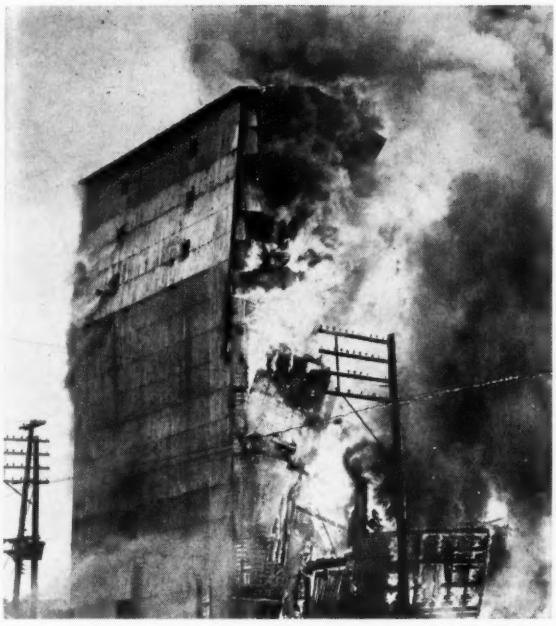
Next, one must consider training of personnel in each other's duties. Firemen are limited to such police duties as can be performed in their stations. They cannot be dispersed throughout the town doing investigative work or traffic control. Police *must* be trained to handle both *small* and *large* fires of all types, otherwise they cannot function efficiently. Such training is not a "one-shot" proposition that can be taught to a man once and then eliminated for the remainder of his tenure with the department. It is continuing, month after month, to keep pace with industrial progress that creates new fire hazards. The hours spent in such training are lost to the city insofar as protection to businesses, control of traffic and apprehension of criminals are concerned.

A "teamwork" proposition

Fire fighting is a "teamwork" proposition. It requires the functioning of men as a unit so they can *depend on each other implicitly* in the heat of a fire where their lives are in constant danger. This is not possible with different police showing up at successive fires. In a modern fire station, at least half of firemen's so-called "idle" hours are spent in study of fire hazards, new techniques, and in actual drilling with their equipment. They can do this and still be in service.

To be effective, fire response must be immediate. The first few minutes are most important, provided an adequate force can respond. If the few

Continued on page 1023



Raging fire destroys large elevator. Note messenger-supported cable attached to pole burning from effects of radiated heat

Smoke practically obscures lee side of fire while Crown Point men stretch lines by hand in effort to prevent extension

Photos by Leslie Bargfeldt, Jr., Independence Hill Volunteer F. D.

Mutual aid meets severe test during grain elevator fire

By EMIL G. ZULA

Crown Point, Ind., Fire Department

BURNING GRASS under a storage shed of the E. K. Sowash grain elevator, Crown Point, Ind., on Sunday, May 29, touched off a fire that caused nearly $100,000 damage to the elevator and for a time threatened the northeast section of the town.

The elevator, situated along the Pennsylvania Railroad tracks, was classified as of 40,000-bushel capacity and was 180 feet long, 50 feet wide and extended 80 feet into the air.

A woman on her way home from church turned in the alarm at 11:37 a.m. Crown Point's first-aid truck responded as soon as the first two men arrived at the station. These men were sent to the scene to size up the situation before the pumper arrived. The Crown Point city pumper responded shortly after with four men and a driver. Before it arrived, the men in the first-aid truck radioed for help. The public alarm siren was sounded again to signify a general alarm and the mutual aid plan was put into effect via radio through the Lake County Fire Service, Inc.

As fire entered the tall elevator tower, white-hot corrugated metal sheets and embers were flying nearly 200 feet from the fire. To the east was the Letz Manufacturing Co. and the Mobil Oil bulk plant with eight tanks holding 65,000 gallons of petroleum products plus its garage and warehouse. To the south was the Conoco bulk plant with seven storage tanks holding 70,000 gallons of petroleum products. To the west stood the Farm Bureau Co-op bulk plant with five tanks holding 65,000 gallons of petroleum products.

North and northwest was the Root Lumber Co., Hub Tire Service and Schwarz's blacksmith shop. Across the street, north of Schwarz's was the Root Lumber Co.'s pole storage yard. To the southeast, was the Burton Roofing and Coal yard.

Assistance requested by Chief Albert Rettig under the mutual aid plan was quickly forthcoming. Independence Hill, 4 miles north, responded with a pumper and a tanker. Cedar Lake, 7 miles southwest, responded with a pumper. The Crown Point rural pumper, owned by Center township, stretched hose for Independence Hill and then went around to the northeast side of the fire to take up a position. Merrillville, 5 miles northeast; Lake Dale Carlia, 7 miles south; and New Elliott, 7 miles northwest, each responded with pumpers and tankers. Ainsworth-Deep River, 11 miles northeast, was called to stand by for Merrillville and Independence Hill to cover Ross Township.

Crown Point, Cedar Lake and Independence Hill hooked to hydrants and the other pumpers and tankers cruised around to put out roof and grass fires. Crown Point, on the west side of the fire, stretched a 2½-inch line wyed to two 200-foot lines of 1½-inch hose; then, followed this with another 2½-

Continued on page 1026

Combination of portables and units in fire trucks (left) give Tucson Fire Department flexible communication system designed to meet all situations. Apparatus is in constant contact with headquarters while responding to alarms or at scene of fires. Firemen carrying portable radiophones (right) remain in radio contact while inspecting buildings. In case of fire alarm for district concerned, quick assembly at apparatus parked nearby is possible—*All photos courtesy of Motorola Inc.*

Radios add flexibility to Tucson Fire Department operations

TWO-WAY radio is the key to effective fire protection coordination for the Tucson, Ariz., Fire Department. Flexible communications are made possible by a radio network that includes some 30 mobile units installed in department vehicles and four two-way portable radiophones.

No matter what the conditions, the combination pays off, report department officers. With all the units operating on the same frequency at fires, officers on the ground can talk directly with firemen on ladders or inside fire buildings. Up-to-the-second reports are relayed on the path of the fire and the progress being made in putting it out. Fire officers carrying the portables can direct the forces on the ground to critical locations, and in turn, the men on the ground can relay orders to the fire fighters inside the building. Greater flexibility in supervision is achieved by equipping officers on the ground with portable units so they can move around the area of the fire rather than be confined to vehicles, depending on conditions.

A portable unit has been assigned to the rescue squad and is carried to all emergencies. Firemen can then radio for immediate aid, request a doctor or ambulance or have the dispatcher alert a hospital.

The portables are proving useful in still other ways. The fire department conducts regular building inspections throughout Tucson. While making inspections, fire fighters carry the radiophones in order to remain in constant contact with apparatus parked outside.

Value of the units to the Tucson Fire Department was aptly described by one of the firemen who commented, "Our portable radios can go anywhere man can." □□

The rescue squad utilizes both radio-equipped vehicles and portable units. Quick relay of messages in emergencies has facilitated operations

Front view of station shortly after fire was extinguished. Building was considered a total loss—photos by Lieutenant Dennis C. Thompson, Front Royal Police Department

North side view of station shows blast destruction to building. Portion of rear and side wall completely disintegrated

Front Royal, Va., blast wrecks gasoline station, injures four

By CHIEF C. WARREN TURNER

EXPLOSION of gasoline vapors in a Front Royal service station on March 5 injured three employees of the station as well as a passer-by and heavily damaged the building. The alarm was received by the fire and police dispatcher at 3:17 p.m. for the Blue Ridge Servicenter at the intersection of South Street and South Royal Avenue. He immediately sounded the public alarm and placed the necessary information on the automatic telephone alert recorder which is employed by the fire department to inform individual firemen of the location.

Response to the alarm was immediate, bringing a 750-gpm pumper, a 500-gpm pumper, a quad with a 500-gpm pump, an ambulance, and 46 volunteer firemen. First firemen on the scene found that the injured had been removed to Warren Memorial Hospital in Front Royal by a passing motorist. They were Lenny Campbell, 17; Lynn Pomeroy, 22; Thomas Campbell, 21; all employees of the station and Barry Simonpietri, 16, a passer-by. All suffered burns and shock.

The station was fully involved in flames, and the attack was made with two 1½-inch fog lines and two 1-inch booster fog lines. A 2½-inch line was stretched to a hydrant to back up the smaller lines, but was never used.

The station was of brick and frame construction consisting of a sales room, an office, a ladies rest room, a mens rest room, a partial basement, a bay with a grease pit, and a bay used as a wash rack. There was also a smaller basement room beside the grease rack and other open spaces under the building. The basement rooms had a large amount of tires, tubes, oil and batteries stored in them. A door led from the grease pit to the basement rooms.

Approximately one-half hour prior to the explosion, the grease rack had been washed down with a mixture of gasoline and kerosene. A bucket containing approximately 1 gallon of the mixture was left standing in the vicinity of the grease pit near the door leading to the sales room. After washing with gasoline and kerosene the pit was hosed down with water.

The temperature was in the low 70's on this sunny Sunday afternoon. The fumes from the cleaning mixture evidently were concentrated throughout the entire basement, sales room and rest rooms, and were ignited either by a stove in the sales room or an air compressor motor in the basement. There had been no fire in the stove since the night before, but it was impossible to determine whether there was any fire left in the stove or not. The large doors to the bays were open during the cleaning and explosion. The explosion did heavy structural damage to the entire building destroying the floor and ceilings in the sales and rest rooms, completely destroying the outside walls of the rest rooms and the rear of the basement rooms. The walls to the sales room were cracked and pushed out of line and some portions were destroyed by the blast. All glass in the building was blown out. Debris was scattered as far as 150 feet from the building. The four persons mentioned earlier were the only occupants of the station at the time and were all knocked to the floor by the explosion but were not seriously hurt.

Building a total loss

The contents of the building valued at approximately $7,500 were totally destroyed with the exception of some oil in cases and some small salvage of equipment. The building was termed a total loss.

According to the employees, fire immediately followed the explosion. The first flames seen were in the grease pit, but quickly involved the entire building fed by the mixture of gasoline and kerosene left in the bucket and the large amount of tires and storage in the basement. □□

Algin-thickened water was tested in drops from helicopter for effectiveness on roof fires in dwellings

L. A. City F. D. photo by O. E. Cummings

Los Angeles City firemen experimenting with bulldozers for demolition during large-scale disaster where water might not be available. Air-conditioned helmet enables driver to work close in on hot fires

L. A. City F. D. photo by Cecil R. Lynch, Jr.

Fire suppression tests conducted by Los Angeles City Fire Department

Novel ideas employed against time-honored problems

By LEE ZITKO, *Inspector*
Los Angeles City Fire Department

EXPERIMENTS to test unorthodox fire fighting methods were recently conducted by the Los Angeles City Fire Department on some condemned houses. The buildings were scheduled for demolition as part of the expansion of the Van Nuys Airport in the San Fernando Valley. Three relatively new ideas were tried out.

One, which came from within the department, was an experiment in the use of a Mountain Patrol caterpillar tractor for controlling a house fire and or cutting a fire break in a residential community during a large conflagration or atomic attack in which water might not be available. It was learned that the tractor was able to collapse an ordinary house well involved with fire, shove the burning wreckage away from exposures and, if necessary, practically stamp out the fire by running repeatedly over the debris. Such a technique, naturally a last resort among fire control measures, is nonetheless a possibility where a structure is obviously going to be lost anyway or must be sacrificed to cut a break. An air-conditioned helmet, developed by a private concern and recently purchased by the fire department after a period of trial use by the tractor drivers at brush fires, enabled the driver to work the big cat surprisingly close in the tractor-versus-house tests.

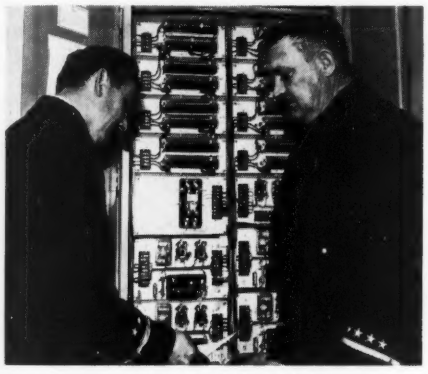
From developers in private industry came a "wind machine" designed to control the air streams in and around the fire. Consisting of huge, truck-mounted fans used both with water to form a mist and sometimes without water, the controlled air streams are said to prevent fire spread to other exposures by reducing radiated and convected heat, killing flying brands and making approach with hose lines easier by reducing ambient temperatures. In a test observed at the above-mentioned house burnings in Los Angeles, the fans effectively did these things. (Extinguishments of the fire was not a claim of the demonstrators at this particular test, although this was not understood by all observers.)

In another demonstration at the house-burning site, Los Angeles City and County firemen saw a commercial company perform experiments in the use of algin-thickened water and algin gel for suppressing and retarding structural fires. Algin is derived from kelp, a giant seaweed growing in the Pacific Ocean. The purpose of the algin is to hold water on fuel surfaces, thereby making fire fighting with water more effective. The effect is sometimes described as "stacking water." This material had been previously researched by the company in experiments on watershed fires. Quantities of the gel were dropped by helicopter on spot fires started on a shingle roof. An exposure house was coated with the material, and the adjacent house set afire. The thickened water was also applied on a house fire through special hose lines from a special piece of apparatus. □□

Frans Braal, left, noted Dutch construction engineer and designer of the complex privately built fire protection system of The Sequoias, discusses plans for the project with Woodside Chief John Volpiano

—Photo courtesy Northern California Presbyterian Homes, Inc.

Members of the fire department inspect reservoir system. Tank to the right contains 30,000 gallons of water for domestic use. This tank is always maintained at a level of 25,000 gallons for fire protection purposes. The 300,000-gallon reservoir, left, is maintained at a minimum level of 250,000 gallons



Fire Inspector W. Getchell, co-designer of the fire protection system of The Sequoias, explains workings of one of the many electronically controlled fire alarm panels to Assistant Chief A. Hallett, who heads the administrative division of the Woodside Rural Fire Department

Forethought provides fire protection for retirement community

RURAL FIRE DEPARTMENTS always have complicated problems because of the large areas covered. Chief John Volpiano of Woodside, Calif., inherited more than his share when it was decided to build The Sequoias, a $6,000,000 nonsectarian residence community for people of retirement age in neighboring Portola Valley, under the sponsorship of the Presbyterian Church.

The project, which was ready for occupancy last May, accommodates 315 people, all above the age of 60. It lies in the estate residential zone of the rolling, wooded country which is characteristic of the southern part of the San Francisco Peninsula.

The Woodside Fire Protection District covers some 30 square miles in one of the wealthiest and most beautiful areas of Northern California. Because of this, Chief Volpiano has been able to obtain appropriations for good equipment and sufficient money to be able to maintain it in excellent condition. At the present time, there are 21 full-time firemen and from 12 to 20 volunteers available for call. Equipment consists of four triple-combination pumpers and one general service truck, located so that any point within the 30-square-mile area can be reached on one or more units in a matter of minutes.

Construction of The Sequoias, however, presented unique fire protection problems. The site consists of 40 acres of land, partly wooded. The building complex consists of 18 acres of low ranch-type buildings set about interior courtyards. An excellent paved road extends completely about the perimeter of the building area, but there are no roads or driveways within the building complex.

The fire protection system has been a matter of close analysis and cooperation between the architects, Skidmore, Owings & Merrill of San Francisco; the general contractors, Williams and Burrows of Belmont, Calif.; the state fire marshal; Chief Volpiano and his inspector and fire marshal, William Getchell.

Water is provided by two separate systems which can be integrated in many ways in case of emergency. At private expense, Frans Braal, noted Dutch construction engineer, working for Skidmore, Owings and Merrill, designed a perimeter system supplied by two reservoirs. One holds 300,000 gallons of water for use in irrigation of the landscaped areas of The Sequoias,

Continued on page 1025

IAFC
Enters New Era

Las Vegas conference sparked by spirited exchanges

EDWARD F. DEIGNAN
Director of Fire, Elizabeth, N. J.
President, IAFC

LEWIS A. MARSHALL
Chief, Providence, R. I.
First Vice President, IAFC

RAUL GANDARA
Chief, Fire Service of Puerto Rico
Second Vice President, IAFC

G. A. MITCHELL
Chief, Opelika, Ala.
Treasurer, IAFC

CONTROVERSY and parliamentary maneuvering, plus the largest exhibit of fire apparatus and fire fighting equipment in its history, marked the recently concluded 88th annual conference of the International Association of Fire Chiefs. Staged at the magnificent Las Vegas Convention Center, a new "look" was evident as many chiefs among the 2,400 persons who attended, noted that, for the first time in a number of years, the members willingly thrashed out highly emotional problems on the convention floor. On occasion, the discussions became heated with proponents and opponents of various questions vigorously stating their positions for judgment by the assembly. As a result, all business meetings were heavily attended and by final adjournment, most of those present were agreed that the session was one of the most exciting and productive in recent years.

Two occurrences which helped stimulate the members present included a spirited campaign for second vice president and the use for the first time of the workshop type of discussion groups for current fire service problems. The election campaign included tabling of the Constitution and By-Laws Committee report in order to prevent disqualifying a prominent candidate by rule. The report, if adopted, would have restricted the membership in selecting candidates to a rotation method. The motion to table was made by the leading opposition candidate in a statesman-like move to provide free expression by all present.

The heavily attended discussion groups, as the events continued, brought the more reticent fire chiefs onto the floor and resulted in complete discussion of many knotty problems. By the final day the stage was set for a climactic explosion.

It began innocently enough with a recommendation by the Resolutions Committee that a resolution calling for opposition to the Municipal Fire Defense Institute as sponsored by the American Municipal Association be referred to the board of directors for further study. Immediately this move was challenged from the floor by representatives of the Great Lakes Division who sponsored the resolution. Nearly two hours of debate ensued before the opponents of the move were defeated on a point of order. When the smoke of battle had cleared, it was necessary for the chairman of the Resolutions Committee to remind the presiding officer that he had not finished his full report.

When the business sessions adjourned, it was very clear that the general membership of the IAFC is alert and aware of those problems having a direct effect on their responsibilities as fire chiefs. In addition, they served notice on the officers and directors that it does not intend to be a rubber-stamp organization and that all who aspire to official position in the Association may be called to account if necessary.

Those who observed this action at Las Vegas came away convinced that the Association profited by the sharp exchanges. By willingness to stand up and be counted the membership has shown once again that it intends the IAFC to be the voice of the fire service in all fire protection matters that affect the welfare of this country.

The newly elected officers were sworn in at the annual banquet held in the main auditorium of the Convention Center on Thursday evening, September 28, by retiring president Chief William J. Taylor, Burbank, Calif. Included were: Director of Fire Edward F. Deignan, Elizabeth, N. J., president; Chief Lewis A. Marshall, Providence, R. I., first vice president; Chief Raul Gandara, Santurce, Puerto Rico, second vice president; and Chief G. A. Mitchell, Opelika, Ala., treasurer. Following the ceremony, Chief William K. Blaisdell, Honolulu, Hawaii, presented Chiefs Taylor and Deignan with inscribed polished gourd bowls as mementos of the term of office. The conference adjourned following the banquet with the 89th conference scheduled for Toronto, Ontario, September 24-27, 1962. Convention headquarters will be the Royal York Hotel and preparations are already under way.

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ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN.

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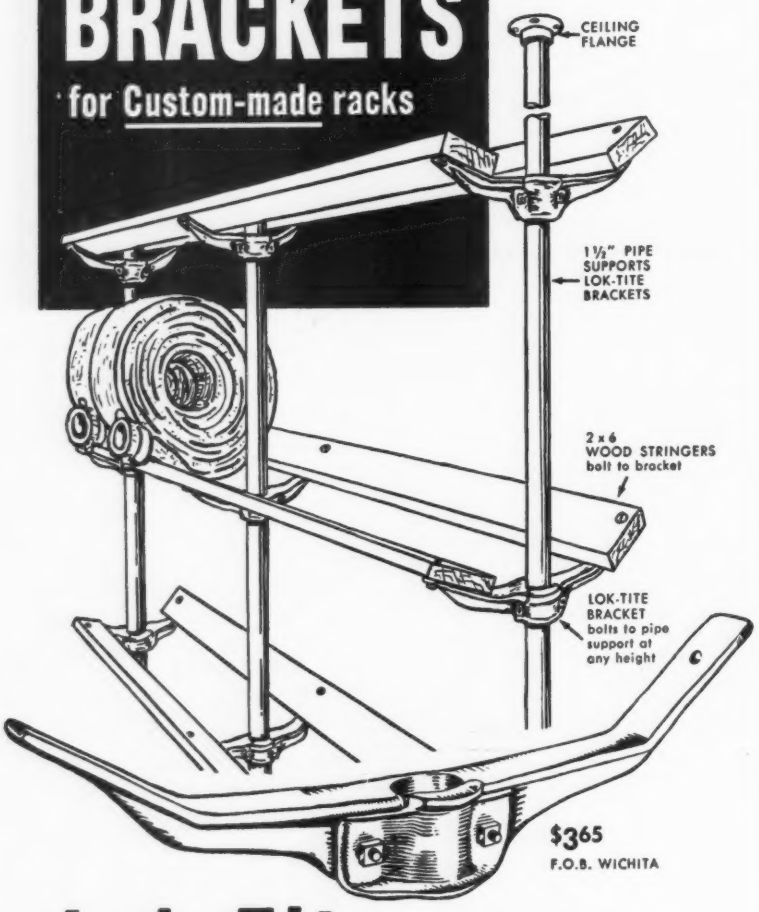
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SUPERMARKET CONSTRUCTION

Continued from page 992

carried up through and parapeted above the roof. In some cases the party wall is carried only to the underside of the gable sheathing boards. If this is done, there will be an excellent channel of communication for fire to pass from one roof to the next (see Diagram No. 2).

Interior of store

Partitions vary greatly from store to store. As a rule, the average partition is not too substantial. Generally they will be framed with wood studding and covered with sheet rock, masonite, plywood, and in rare cases, asbestos board. Wood is favored because of the ease with which shelves, additions or alterations can be made. Infrequently combustible wallboard may be used as partitions. The partitions often do not go all the way up to the ceiling, and in case of fire in the storage or utility areas, the rest of the store is directly exposed.

The shopping area presents one large unbroken space which allows a fire on any point of the floor to expose the entire floor to smoke, heat and fire. Such large open areas serve to create large drafts which fan the fire and add fuel, both structural and contents. As mentioned previously, the usual partition does not go completely to the ceiling. This does not prevent exposure to the store proper, but does present a barrier to fire stream penetration. Firemen are met by a pall of smoke and heat and cannot advance with a line to reach the seat of the fire. As a result, they are soon driven out of the store. The effect of outside streams is nullified because of the distance of "throw" needed and the obstruction of the partitions.

Construction Features of Older Markets

Older supermarkets, in general, run to much smaller areas than the modern giants. They do not as a rule present the same problems, yet older stores may have cellars and often occupancies are found above them. For these reasons, they can present a difficult job for the fire department. Older stores often are part of a group of buildings, having common party walls from the cellar on up. There may be apartment houses or other stores alongside.

Usually older stores do not exceed 10,000 square feet in area and their foundation walls are of masonry.

Continued on next page

Later stores had brick, then concrete foundation walls.

Where foundation walls are common with adjoining structures, it is often found that floor joists overlap from one building to another. This may form a horizontal flue, and fire, once it gains entrance, spreads from one building to another. This is a common cause of spread in cellar fires. It is not difficult to detect where there are open ceilings, but where cellar ceilings are closed off, some fire officers are reluctant to open them for examination. They may save a hole in the ceiling but lose a building. A main center girder, usually of wood, runs from the front wall to the back foundation wall. Because of its great length it is supported about every 10 feet by columns also mostly of wood. These are particularly susceptible to rot at the ground line.

Wood floor joists run from side foundation walls and rest on the wood girder. The underside of the floor boards of the store are visible and exposed to fire in the cellar. At times the cellar ceiling is fire-retarded. Frequently, open stairs in the rear lead from cellar to the store. There may also be another stairway at the side of the store leading down to the cellar. At least one of the stairways may be permanently blocked by some form of conveyor belt or roller mechanism used to move goods. If there is only one stairway, there will usually be some form of temporary conveyor or simply two heavy wood planks resting on the stairs to form a slide. Ventilation of these cellars is difficult. If there are windows, they are apt to be very small and few in number.

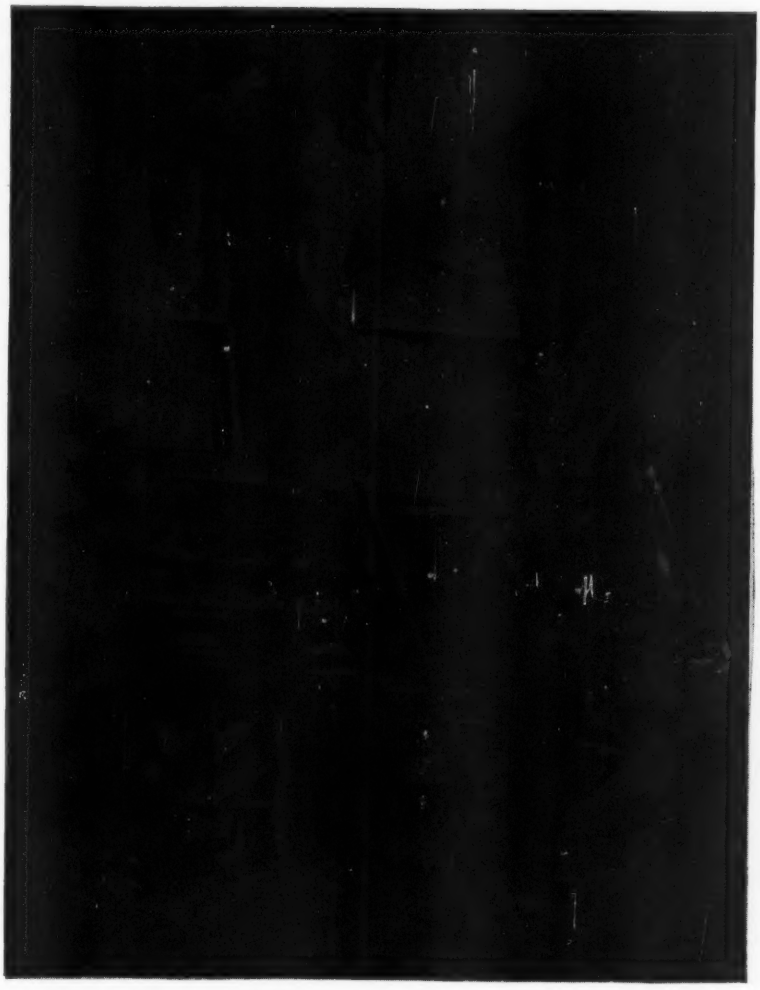
Separate building

If the market is a separate building, the side walls are usually of unpierced brick, except for the possibility of a service door toward the rear. If the side wall is a common party wall, the construction is also brick. Here the problem of overlapping ceiling joists may exist with the hazard of fire-spread as outlined in cellars with common walls. Any windows will be found in the rear, and usually these will be for toilets only and may be barred from the inside. Also in the rear will be a service door used to receive goods. This will not only be closed but locked as well. When the store is closed for the night, a substantial steel bar is placed across the center of the door.

Usually a conventional flat roof with wood joists is employed. It is wood-sheathed, covered with felt and mopped with tar with gravel on top of

Continued on page 1021

THE MINUTE THAT WAS FOREVER FOR THE FACE AT THE WINDOW



The ladderman had a brief glimpse of a terror-stricken face at the window. Just as he reached it, the floor collapsed and the face disappeared.

But it wasn't that final minute which decided the fate of the face in the window—it was one of the seven minutes it took to pull the hose off the pumper and get water on the fire.

Bi-Lateral flips off the pumper faster because it's more flexible, and because it folds flatter. Bi-Lateral construction allows *more* hose on each pumper—enabling you to cover more fire, faster. Save time—save lives —with Bi-Lateral.

Bi-Lateral construction saves you *more* than precious minutes, because the same flat-folding feature is responsible for the protection of the lining. This means you replace it far less often—*you save precious dollars, too!* Bi-Lateral costs less per foot per year.

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False alarms

Mixed greens are good for you—especially those fives, tens and twenties.

A Texas story now going the rounds concerns a man who struck oil and, with his new riches, built a mansion and three swimming pools. One pool he keeps filled with cool water and another with warm water; the third he keeps empty. He explains: "A lot of my friends can't swim."

Texaco Safety Digest

Plugwrench says arithmetic has caused many a secretary to lose her job—especially when the boss's wife puts two and two together.

Sign in a store window: "100 per cent downpayment; eliminates worry over losing credit cards, and the need of making further payments."

An excited female voice came over the telephone. "A man is trying to get into my room through the window."

"Listen, lady, you've got the wrong number," answered the dispatcher, "this is the fire department, not the police."

"I know," said the lady, "but you see my room is on the third floor and the man needs a ladder."

Plugwrench asked the chief for a raise.

"But I gave you a $10 increase last month," the chief said.

"Holy mackerel!" said Plugwrench, "my wife didn't tell me."

Employer: "For this job we want a responsible man."

Applicant: "Then that's for me. Everywhere I've worked, when something went wrong, they told me I was responsible."

Plugwrench was the center of an admiring crowd after he had rescued a buddy at a fire.

"You brave man," exclaimed a spectator. "Tell us how you came to be so courageous and save your buddy."

"I had to," said Plugwrench, "he was wearing my boots."

A man saw a friend of his, accompanied by a great lumbering dog, approaching his front door. The door opened, the dog barged right in, bumping into furniture and pushing its way into room after room. Soon there was a sound of smashing. The owner of the house could stand it no longer and shouted, "Get your dog out of this house. It should have been taught some manners!"

"My dog?" said the visitor, "I thought it was your dog!"

Hersey-Sparling Metrogram

"Well, I see the lumber wagon forgot to disconnect the battery charger again. Either they need a longer cord or a smaller first-in district."

Insured: "Now that I've taken out this policy, how much would I get if my house burned down tonight?"

Agent: "About 10 years."

A divinity student named Tweedle
Refused to accept his degree;
He didn't object to the Tweedle,
But hated the Tweedle, D.D.

At the recent IAFC Conference, an oil-wealthy Indian was observed registering at the Sands Hotel. The clerk told him that two suites were available, one for $50 a day and the other for $75 a day.

"What's the difference?"

"When you watch a Western on television in the $75 suite," the clerk explained, "the Indian always wins."

A wise teacher sent this note home at the start of the term: "If you promise not to believe everything your child says happens at school, I'll promise not to believe everything he says happens at home."

Plugwrench: When I put my coat on for the first time and buttoned it, I burst the seam down the back!

Uniform tailor: Yes, that shows how well our buttons are sewed on.

It is also rumored (but we don't vouch for it) that a sign on the speaker's platform at a chief's convention read: "Do not photograph speakers when they are addressing the audience. Shoot them just before they begin to talk."

Captain (angrily): "Who told you to put flowers on the chief's desk?"

Fireman: "The chief, sir."

Captain: "Pretty, ain't they?"

There's a television set in every hotel room in Moscow, but it watches you.

Inviting a friend to his wedding anniversary, an Irishman explained: "We're on the seventh floor, Apartment D. Just touch the button with your elbow."

"And why should I use my elbow?"

"For goodness' sake, man, you're not coming empty-handed, I hope."

Sign in laundry: "We do not tear your laundry with machinery. We do it by hand."

Unusual Rotterdam extinguisher accident kills seven workers

By M. v. d. BLINK, CFO
Rotterdam Municipal Fire Brigade
The Netherlands

CARBON DIOXIDE, accidentally released from a battery of extinguishers aboard the 20,000 ton tanker "Mathieson" while the vessel was in drydock at Rotterdam, Holland, killed seven men on April 5 and caused the hospitalization of 42 others. At the moment of the accident, 39 dock-yard men were busy in the engine room performing service on the ship's engines. Cylinder heads had been removed and heavy obstacles were spread over the engine room deck.

The engine room is protected by a carbon dioxide installation of 114 cylinders. Each bottle contained 33 kilograms (about 73 pounds) of lightly perfumed CO_2. The extinguishing system has several nozzles in the bilges and also in a ring 1 meter (39.37 inches) underneath the highest platform.

At the time, employees of a firm which services extinguishing installations had begun inspecting and weighing the CO_2 cylinders. One man was disconnecting the first pilot or starting bottle. Apparently he leaned one of his elbows on the cable of a second pilot cylinder which immediately operated.

As a consequence, the system discharged what was later determined to be 89 cylinders or a total of 1,473.5 cubic meters of carbon dioxide. As the cubic capacity of the engine room is 5,950 cubic meters, a concentration of nearly 25 per cent CO_2 was reached. The workers below had no chance of escape and were found in all corners of the engine room.

The alarm was transmitted to the Rotterdam Fire Brigade at 11:36 a.m. A combined pumper-rescue company responded from the nearest station, a distance of 4 miles through extremely congested traffic. Arrival was at 11:46 a.m., and as the ship was in dry dock, complicating the size-up and search, the first detailed message reporting the circumstances reached the fire department central communications room at 11:56 a.m.

The first-in company commander asked for all available breathing apparatus and manpower which were immediately dispatched together with police and ambulances. Firemen, wearing both oxygen and air masks, went into the ship and removed the victims. Rescue and removal was complicated by the intricate walkways on the ship and the fact that the vessel was in dry dock. By 1:25 p.m., all 42 men who had been saved were in the hospital.

Following the incident, wide praise was given to the teamwork displayed by the firemen who effected the rescue, the specialists of the fire brigade who kept breathing apparatus supplied, ambulance personnel who placed all available stretchers on the deck of the ship, and the police who kept the streets leading to the hospital free of traffic and escorted the ambulances. □□

Fowler Refutes Criticism Of NBFU Grading Schedule

Everett W. Fowler, chief engineer of the National Board of Fire Underwriters, recently told members of the American Municipal Association that no purpose would be served if the NBFU grading schedule were changed merely to reduce existing municipal classification.

In a statement delivered to the recent annual meeting of the AMA in Seattle, Wash., he said: "The National Board is conscious of its responsibility to keep the grading standards up to date and has been actively engaged over the years in a continuing program for review of the standards and their application to cities throughout the country. We wish to point out," Mr. Fowler continued, "that changes in the schedule must be carefully evaluated and thoroughly tested before they can be adopted, and this takes time."

Fowler said statements by officials of the AMA at various times have implied that one of the purposes of their organization is to obtain reductions in the classification of cities.

"May we call your attention to a fact which said comments overlook—that the grading schedule is a measuring device like a yardstick. Its purpose is to provide a means of classifying cities on a relative not an absolute basis," he said.

"Since the schedule provides a relative grading of the fire defenses and physical conditions of cities and is used in a number of ways, there would be no advantage to anyone if the grading schedule standards were changed for the sole purpose of reducing existing municipal classifications."

He pointed out that although the classification might be lower, the relative position of each municipality as well as its fire protection would generally be unchanged.

The National Board's grading system has been under fire by some AMA members. In furtherance of its objectives, the association has established a Municipal Fire Defense Institute. In a recently published AMA brochure on the MFDI, it was stated that all hope for securing needed changes in the grading schedule rests with the newly formed institute.

Fowler took exception to the varied charges leveled by the AMA and pointed out that the MFDI will be duplicating work which the National Board is doing. He called for a cooperative effort in considering the matter and pointed to a recent meeting in New York City of executives of the National Board and the American Municipal Association and a statement by Patrick Healy, executive director of the AMA, in which he said:

"We hope you will understand that we wish to approach this whole matter in a cooperative spirit with the National Board of Fire Underwriters . . ."

Fowler said the National Board regrets to point out that some recent statements made by officers of the AMA are at variance with Mr. Healy's statement and the sentiments of other AMA representatives made at the New York meeting.

Referring to an AMA charge that cities are required by the National Board grading standards to expend huge sums of money to retain their fire ratings which are no longer necessary because of technological advancements in fire fighting, Fowler declared there was not "one iota" of evidence to substantiate the charge.

"Publishing statements based on conjecture or opinion charging a responsible organization with impropriety are hardly conducive to cooperation and understanding. To this day we have not received from anyone in the AMA any evidence to substantiate the charge," he said.

Battalion Chief Dies At Cincinnati Fire

Chief Robert Riegler, 3rd Battalion, Cincinnati, Ohio, Fire Department, collapsed and died on June 13 while directing operations of the 1st Battalion at a second alarm for the Central Brass Co., 1020 Woodrow Street. Immediate cause was given as smoke inhalation.

Chief Riegler had been special-called to the second at Box 5131 at 8:39 p.m. to cover for Battalion Chief 1 who was at another fire. On arrival he directed hose line and ladder placement and then returned from heavy smoke conditions to order placement of salvage covers and masks for all personnel. He then collapsed and was given mouth-to-mouth resuscitation by Assistant Chief Luggani, director of training. Dr. Giles Decoursey administered adrenalin but the chief was declared dead on arrival at General Hospital. Chief Riegler was 45 years of age and a veteran of 22 years service in the department. ***Pat Holz***

MIDWESTERN

Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

The striped safety coat for firemen is an Original Midwestern development — first in the field — a leader ever since its introduction 19 years ago.

The BRILLIANT YELLOW stripes are actually rubberized into the black rubber . . . an exclusive feature that defies comparison with substitute or imitation models where the stripes are glued, sewed or painted on the material.

When working under hazardous conditions in smoke, fog, dust or darkness, firemen deserve the superior quality, design, comfort and safety features offered by the Original Midwestern Safety Coat.

Many Fire Chiefs who insist on the best of protection for the men of their department specify MIDWESTERN SAFETY garments to the last man because every outstanding Midwestern feature is original. All fabrics are extremely soft and flexible and have the qualities to stay that way at varying temperatures. You can always distinguish a MIDWESTERN SAFETY garment by the soft feeling of the material in both rubber and fabric type garments.

We have always designed and constructed our garments with the one thought . . . that every fireman deserves complete protection in his hazardous work of protecting life and property against the ravages of fire.

COMBINATION BUNKER SUITS

The many weights of both rubber coated and cloth type materials offered in our MIDWESTERN Quick-Hitch suit makes this combination ideal for all sections of the domestic market and export. Also, both coat and bunker pants may be purchased with or without detachable wool linings.

MIDWESTERN SAFETY MANUFACTURING CO.
Mackinaw, Illinois

☐ Have Midwestern representative call with complete information and prices.

☐ Send Free Catalog and fabric samples.

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MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.
Located in the heart of the Greater Peoria Manufacturing Area
Manufacturers of the Famous MACKINAW Safety Coat

NUCLEAR ACCIDENTS

Continued from page 1011

Unannounced tactical problems are given to all officers quarterly. These are hypothetical cases, outlined on paper in advance of each training session, and are designed to simulate major incidents. Radiation is always an important factor presented in each problem. Each officer, working independently, must write out in detail all actions he would take in order to bring the emergency under control. Several hours are then spent discussing the approach taken by each officer. A group leader presents the material on a blackboard and leads the discussion. This has resulted in formulating preferred tactics, many of which are adopted as written operating procedures. Each officer then reviews the same problem with his crew.

Civil defense sponsored course

The local civil defense organization has recently sponsored a course on use of portable radiation monitoring instruments. The course was organized and has been presented by the Eastern Idaho Health Physics Society. Some NRTS fire department personnel have voluntarily attended this course on their own time.

The most recent radiation safety training course presented to the NRTS Fire Department was conducted during April 1961. This was an 18-hour course, developed and presented by a health physicist, and which covered such material as basic nuclear physics, units of radiation measurement, techniques for radiation exposure control, instrument selection for measuring radiation, definitions of radiation terms, radiation counting methods, care of portable instruments, radiation control criteria, and general nuclear reactor plant familiarization. Each participant was given a written examination upon completion of the course. With their previous training, the NRTS Fire Department personnel were able to complete the course satisfactorily. This course was also developed for laymen, but was a considerable advancement from previous basic training. Experience gained during the SL-1 incident provided a greater appreciation and willingness as well as ability to learn.

The NRTS Fire Department has made an effort to impart to municipal emergency organizations some of the radiation safety knowledge they have gained. The drillmaster has presented Mr. Brannigan's instructor's course to 117 fire department, police, and civil defense instructors from five states including Idaho, Montana, Oregon, Utah and Colorado. With this basic information on radiation safety in laymen's terms and with the help of the text material, "Living with Radiation," it is hoped that these instructors can broaden the knowledge of emergency crews in their individual communities.

One final word on NRTS Fire Department planning is worthy of mention. It has been realized for many years that firemen may encounter high radiation fields while faced with the problem of attempting to save a life or prevent property damage. The big question is how much emergency dose should he accept to accomplish this mission? In the event the NRTS Fire Department responds to an emergency situation in a location where no qualified health physicist is available to provide monitoring, the following radiation exposure limits have been determined to be acceptable: 25 r limit permitted during serious emergency when action is necessary to prevent major property loss; 100 r limit permitted during extreme emergency, when action is necessary to save human life. The senior fire department officer at the scene is responsible to see that these limits are not exceeded and to observe all possible caution to restrict the number of fire department personnel receiving exposure. It is emphasized that the above limits are applicable only during serious emergencies.

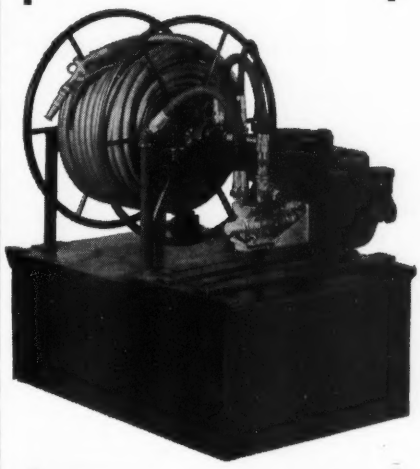
Every possible effort should be made to keep an individual's exposure within the recommended permissible dose limit of 3r, and when a qualified health physicist is present, fire department personnel will always work under his guidance. Radiation exposure received by any given individual can be determined on the spot only through reading his pocket dosimeter; therefore, great emphasis is placed on the mandatory wearing of this instrument. A firm policy of this nature eliminates guesswork when a fireman is confronted with emergency conditions.

Lessons learned

Future planning is usually based on past experiences. Therefore, it is worthy to note a few of the many lessons learned from an incident of this type that will affect such planning and fire department preparedness. These are as follows:

1. Even though radiation hazards are not necessarily anticipated, on what appears to be a routine run, radiation survey instruments should be turned on as the crew leaves the station rather than waiting until a hazard is suspected. This will permit

Your Own "Fire Engine"
FOR INSTANT USE
When Seconds Count



FORESTER
FIRE FIGHTING OUTFITS

U. S. Forest Service Standard
For Patrol Cars, 50 Gal. Cap.
(100–500 Gal. size also available)

Here's a hard hitting "one-man" outfit at your command instantly for complete control of small fires or fast initial attack to hold larger fires until help arrives.

This efficient outfit can be mounted in 15 minutes in your pickup with ample space and load capacity for "working gear."

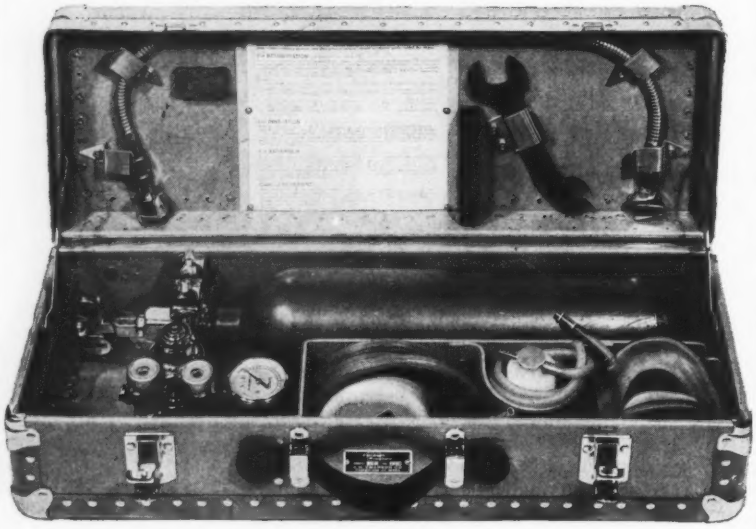
Developed in cooperation with the U. S. Forest Service for constant rugged field work. It is ideal for service in rural areas to control grass fires as well as for structural protection.

Send for descriptive bulletin

WESTERN FIRE EQUIPMENT CO.
69 Main Street San Francisco 5, USA
Branch: Portland, Oregon

EMERSON
Resuscitators

Twin-Yoke "Fetherweight"



Here is Emerson protection that can go in the Chief's car or any other vehicle. Most compact of all . . . only 25½ x 9½ x 6½ inches . . . the Twin-Yoke "Fetherweight" is light to carry and quick to get into action. It is ideal for the first man on the scene . . . and permits protection on more than one side of the fire.

The single "D" tank will give better than 20 minutes of resuscitation using a pure-oxygen mechanism, or 40 minutes with an air-mixing type. For long cases a second "D" or "E" tank can be fitted in the yoke (nose to nose) or a large tank can be used, if a flexible connector is provided.

And the price is right — $270, f. o. b. Cambridge (less tank and connector)

See your Emerson representative or write for Form 2-FC

J. H. EMERSON CO.
CAMBRIDGE 40, MASSACHUSETTS, U. S. A.

the instrument to warm up and readings can be taken as the facility is approached.

2. Breathing equipment must be the best available and should include all auxiliary equipment available that is necessary for efficient operations. This equipment should include such items as an insert in the facepiece to prevent condensation from exhaled air from hitting the face lens and fogging; speaker units are essential on the facepiece for ease of communications, particularly in the dark; audible alarms are needed to warn of low air supply; and the equipment should be designed to minimize contamination (smooth surfaces) as well as to facilitate decontamination. During prolonged operations in cold weather, exhalation valves sometimes stick due to moisture condensing and freezing on the valve mechanism. If one has the presence of mind, he can clear the valve by holding the facepiece tightly and blowing, or by opening the emergency by-pass valve; however, a better design which will correct this problem warrants additional research.

3. When removing contaminated clothing, personnel should be sure to keep film badges and dosimeters with them rather than leaving them with clothing which may be radioactive. The latter action will result in a continued reading and indicate greater exposures than received, thus nullifying the exposure data.

4. Officers should attempt to hold second and third fire companies at a reasonable distance until the initial evaluation is made. Fire department personnel must be trained to minimize spread of contamination to their equipment. Once they descend from the rig to a potentially contaminated area, they must avoid climbing back onto the tailboard or into the cab until they have been adequately monitored and declared free from contamination.

5. Large plastic bags or similar covers are needed in ambulances in the event it is necessary to move injured persons prior to decontamination. Some type of lead shielding between the driver and the emergency compartment may be essential in the event highly radioactive contamination is involved.

6. Decontamination of equipment is a specialized field; however, during serious emergencies, when decontamination personnel are not available, firemen may, of necessity, have to do some of this work. This should be

done in a facility adequately designed for the purpose rather than in the fire station where contamination control is very critical.

The fire department may be called upon to perform unusual tasks after the initial emergency is over. The NRTS Fire Department has utilized fire equipment and has assisted in washing down roadways and equipment in the near vicinity of the SL-1. Fire inspectors have had to re-enter radiation fields at or near the SL-1 facility to restore automatic fire alarm equipment to operating condition, check supervisory alarms which indicated low water level in fire water storage tanks, and check other equipment vital to continued fire protection within the facility. Proper techniques have kept radiation exposures to a bare minimum during these operations.

It is impossible to give complete details on the experience gained by the NRTS Fire Department while participating in emergency activities at the SL-1 facility. However, it is hoped that the highlights touched upon will convey some ideas that may be of benefit to others. Again, the greatest emphasis should be on training and planning. The AEC Radiation Hazards in Firefighting Instructors' Course certainly provides the basic training for any fire department. We consider this a prerequisite to advanced training in radiation safety for firemen.

Radiation hazards in fire fighting are no different than electrical, chemicals, explosive gases, or other hazards. Radiation is merely another problem encountered in the nuclear age, and, with adequate training, it can be faced and overcome as well as any other hazard a fireman encounters.

REFERENCES

1. **"Living with Radiation—Issue No. 1—Fundamentals,"** prepared by Francis L. Brannigan, Office of Health and Safety, U. S. Atomic Energy Commission; $.45, Government Printing Office, Washington 25, D. C.
2. **"Living with Radiation—Issue No. 2—Fire Service Problems,"** prepared by Francis L. Brannigan and George S. Miles, Office of Health and Safety, U. S. Atomic Energy Commission; $1.00, Government Printing Office, Washington 25, D. C. □□

Fire Station Ransacked During False Alarms

Lawrence, Mass., recently endured a rash of false alarms. Four boxes were pulled in 15 minutes, all in the same general area, on the night of July 28. During the alarms, unknown persons ransacked part of the firemen's quarters at Engine 8 on Ames Street.

James J. Regan

FACTORY MUTUAL
UNDERWRITERS'
FIRE ENGINE
INDUSTRIAL
MUNICIPAL
CHEMICAL

FULL OF INFORMATION — Contains 16 pages of information on fire hose in general and Republic Fire Hose in particular, including care, do's and don'ts, jackets, linings, etc.

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

REPUBLIC RUBBER DIVISION • LEE RUBBER & TIRE CORP. • YOUNGSTOWN 1, OHIO
Please send me a copy of your Fire Hose Catalog.

Name_____

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City_____ Zone____ State_____

What's new . . . among the manufacturers

products · processes · personalities

Acme Improves Mask

Acme Protection Equipment Co., 1215 Kalamazoo Street, Grand Haven, Mich., has announced a change in their filter mask valve tube which is said to give the wearer more freedom of movement. Formerly made of aluminum, the new tube is of polypropelene plastic. It is shorter, lighter in weight and claimed to be inert to most chemicals.

Spicer-Thompson Retarder

Dana Corporation, Toledo 1, Ohio, has announced the Spicer-Thompson propeller-shaft-mounted retarder, a hydro-dynamic braking unit for heavy-duty trucks and other vehicles. Designed for Spicer transmissions, it is said to provide maximum braking output of 900 hp at 2,400 rpm for greater safety where critical loads, steep grades or heavy traffic are factors.

IH Improved Transmissions

International Harvester Co., 180 North Michigan Avenue, Chicago 1, Ill., has announced two improved versions of Select-O-Matic automatic-type transmissions in conjunction with torque converters and electro-hydraulic clutches. Clutches are disengaged for shifting by the depression of a button located on the gearshift knob, thus eliminating the clutch pedal. It is available as optional equipment on all IH chassis.

Wilson and Cousins to Market Marsh Pumpers

A new manufacturing-sales agreement has been announced jointly by American-Marsh Pumps (Canada) Ltd., Stratford, Ont., and Wilson & Cousins Co. Ltd., Toronto.

Effective immediately, the complete line of Marsh pumpers, tankers and aerial ladder trucks will be sold exclusively by Wilson & Cousins. The sales set-up offers coast-to-coast representation through Wilson & Cousins branch offices and representatives in Bathurst, N. B.; Montreal; Winnepeg; Calgary and Vancouver.

MSA Fire Blanket

Mine Safety Appliances Co., 201 North Braddock Avenue, Pittsburgh 8, Pa., is marketing a fire blanket for use in industrial plants and laboratories where possibilities of workers' clothing catching fire exist. Said to be flameproof, the compact wool blanket mounts on a wall near the danger point. In case of need the victim pulls a rope extending out of the metal case. This opens a door and permits the pleated covering to move forward. As the victim revolves, he is wrapped in the blanket.

Here illustrated is the rear view of the PAK-KUT outfit. Note how well designed is the carrying unit with wide canvas straps and back panel mounted on a sturdy aluminum frame for comfort.

to be useful it must also be comfortable under often trying circumstances. this fine pak-kut outfit fits snugly on the operator's back. the sturdy aluminum frame is rigid . . .

The first duty of this well tested and very widely used PAK-KUT outfit is to cut smoothly and rapidly through all iron and steel obstructions. The pre-set regulators assure the proper gas pressures. All the operator needs to do is to turn on the cylinder valves and the torch valves and light the torch with the spark lighter furnished. Goggles, gloves and required hose lengths are part of the outfit. Wide canvas straps and back panel, fastened to a sturdy aluminum frame, fit the outfit comfortably and safely on the operator's back. Nothing cuts iron and steel faster than this torch.

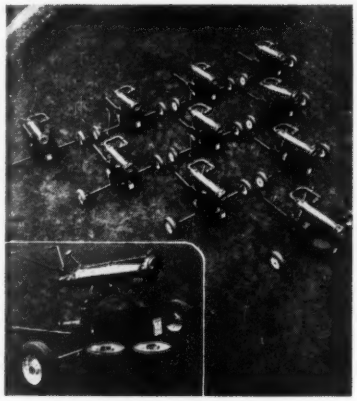
fire departments and rescue crews can save much valuable time and precious lives with this tried and tested pak-kut outfit . . .

NATIONAL welding equipment company...

218 fremont street san francisco 5 california

NO. 577PK

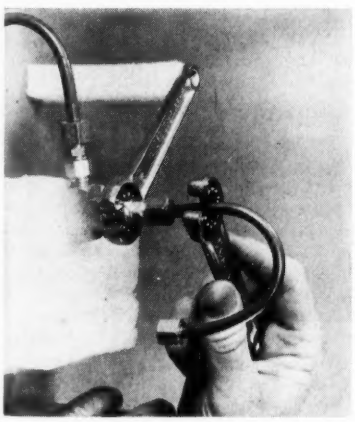
50 National of ...california



Foam Nozzles on Wheels

National Foam System, Inc., West Chester, Pa., recently delivered to a leading refinery, a group of 10 Aer-O-Foam PW-50 variable spray nozzles mounted on two-wheeled running gear equipped with drawbars by which they can be hitched to foam trucks or cars. Mounted directly under the barrel of each nozzle is a cylindrical container for stowage of hose. When fire breaks out, the unit is moved to an advantageous point and the hose connected to a nearby foam truck or other source where foam liquid can be proportioned with water under pressure.

It is claimed the unit can throw a stream up to 225 feet. With a nozzle pressure of 150 psi, a straight foam stream ranging to 4,000 gpm can reach heights as great as 50 feet. A lever-action spray control allows 10 variations in pattern.

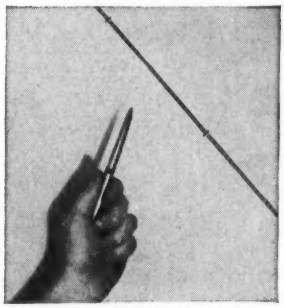


Cam-Loc Wrench

TFK Co., 23788 Harper Avenue, St. Clair Shores, Mich., has introduced the "Cam-Loc Roller Grip" wrench, claimed to employ an entirely new principle in wrenching to maintain constant pressure contact at five points on a fitting, preventing galling, seizing and surface mutilation. Available in open-end and/or box style with or without rachet, it is said to be effective on fittings used with flammable and explosive liquids or gases.

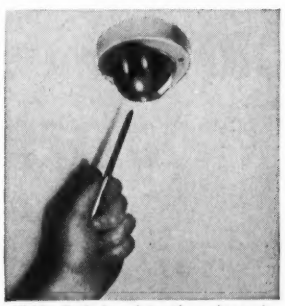
Continued on next page

FOR LOW-COST, DEPENDABLE FIRE DETECTION ALARM!



Kidde Atmo fire detector tubing

KIDDE ATMO: Ideal for schools, hospitals, plants, public buildings, Kidde Atmo Fire Detecting and Alarm Systems use highly sensitive rate-of-temperature-rise detection tubing. Easy to install, simple to maintain, Atmo systems give fast warning in first stages of fire.



Kidde Fyrindex detection element

KIDDE FYRINDEX: Now — dependable fire detection at the lowest possible cost. Kidde Fyrindex features fast-acting, self-resetting detectors, comes in either rate-of-rise, fixed temperature or combination models.

Both Kidde systems are U.L. and F.M. approved; sound alarms locally, at central station, or at municipal fire headquarters; feature one to one hundred zone control and annunciator panels.

For complete information about Kidde fire detection, write today.

Kidde

Kidde Ultrasonic & Detection Alarms Div.
1133 Brighton Road, Clifton, New Jersey
Walter Kidde & Company, Inc., Belleville 9, N. J.

Appointments and Promotions

Darrell E. Albert has been named manager, Chicago district sales office, Mine Safety Appliances Co., 5015 West Belmont Ave., Chicago 41. He was formerly product line manager of gas masks and respirators at the Pittsburgh headquarters. **C. R. Dever,** formerly Chicago sales manager, has ben transferred to Pittsburgh as manager of sales promotion.

George J. Simon has been elected secretary of American District Telegraph Co., 155 Sixth Avenue, New York 13, N. Y., succeeding **L. J. O'Brien** who relinquished his post of secretary-counsel to devote full attention to his duties as general sales manager. He was formerly assistant secretary and assistant treasurer.

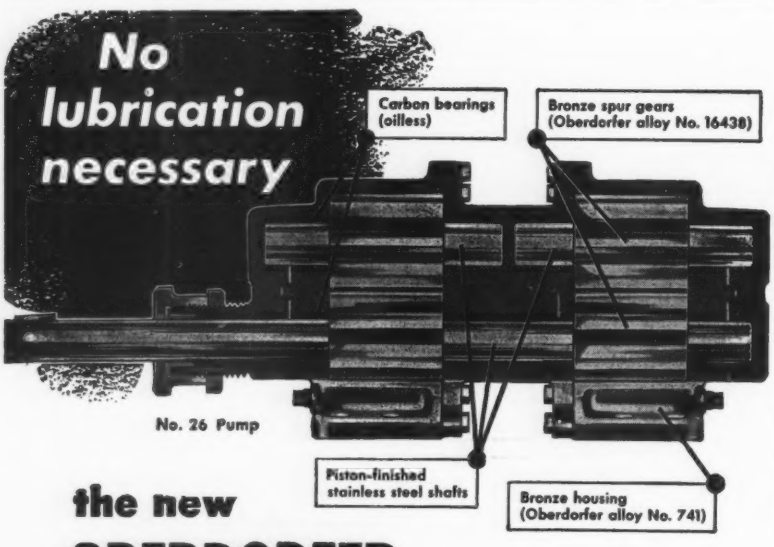
W. F. Wells has been appointed senior vice president and general manager, Midwestern Instruments, Inc., Tulsa, Okla. He joins Midwestern after a number of years with General Electric Co.

John A. Gwin has joined Jomac Inc. as sales representative for the midwest territory comprising Chicago, northern Illinois, and Wisconsin, with offices at 4832 North Lincoln Avenue.

C. C. Dybvig has been named to the newly created position of vice president of marketing for the Dana Corporation, Toledo, Ohio. He joined the corporation in 1954 as general sales manager and in 1958 was elected vice president-sales. He will continue with his present sales responsibilities.

Frank S. Drake has been promoted to vice president, Falcon Fire Alarm Co., Inc., 243 Broad Street, Summit, N. J. He was formerly director of marketing.

Allan M. Johnson, president of Debevoise-Anderson Co., has been elected to the board of directors, National Foam System, Inc., West Chester, Pa.


No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)

the new
OBERDORFER
BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

Federal Signal Unit

Federal Sign and Signal Corporation, 13601 South Western Avenue, Blue Island, Ill., has engineered a four-way communications unit combining siren, mobile public address system, radio amplifier and featuring a distinctive new high-pitched "yelper" signal. The 50-watt, fully-transistorized amplifier and control panel is housed in a compact case and can be mounted under the dashboard or on top of the cowling.

Notifier Alarm Panel

Notifier Corp., 3700 North 56th Street, Lincoln, Neb., announces its Series MCN coded transmitter panel for use with automatic fire detection and alarm systems. The manufacturer states that coded signals are shunt noninterfering, allowing the panel to be connected to most standard coded systems. It combines a mechanically wound McCulloh transmitter with control panel and power supply in a single housing.

Howe Acquires Oren

Howe Fire Apparatus Co., Anderson, Ind., has purchased the Oren Roanoke Corp., Roanoke, Va., the South's only fire apparatus manufacturer. In announcing the acquisition, President Richard S. Howe said that Howe and Oren will each maintain separate identities. The Roanoke operations will be continued and the company will build and market Oren apparatus.

The new owners plan to expand Oren's sales penetration into areas not now cov-

ered, and some new models will be added. Cab-ahead-of-engine, as well as conventional styling, is offered and 65, 75 and 85-foot all-steel hydraulic aerial ladders will be added immediately.

Present plans are to maintain most of the Oren organization intact and no personnel changes were announced. The plant buildings, leased by Oren, were not included in the sale. Mr. Howe stated that, if further plans make it advisable, the company is prepared to erect a new plant.

Excelsior Brass Changes

Excelsior Brass Manufacturing Company, 623 Madison Street, Evanston, Ill., old-line fire equipment manufacturers, simultaneously announces extensive product modernization, enlarged and improved production facilities, along with operation under new management. Michael Kunz, president, states, "This is only the second management change for our company, which dates back to 1891."

The company will continue to maintain its line of more than 500 quality products and at the same time sustain a vigorous program of redesign and development of new brass fire nozzles, valves and allied hardware. It is interested in adding new dealers to its nationwide representation. □□

UCLA Test Plant To Reclaim Waste Water

A plan for reclaiming millions of gallons of waste water for recreation and fire protection purposes will be tested during the next two to three years by a UCLA engineer and the Los Angeles Board of Public Works. The pilot facility, now ready for operation at the Playa del Rey Hyperion Treatment Plant, will be the test laboratory for a process to purify sewage water so it can be reused for filling artificial lakes and fire fighting reservoirs.

The process, involving the use of algae ponds to lower the salt and bacteria contents of sewage water, was developed at the UCLA Department of Engineering by Professor Albert F. Bush. His method adds a third purifying treatment to the two now used by the Hyperion plant. At Hyperion, waste water from homes and some industries is put through a sedimentation process, in which the solid matter settles to the bottom, and an oxidation process, which removes most of the bacteria. The water is then piped into the ocean.

Although the water is permanently lost to the system's water users in the cities of Los Angeles, Santa Monica, Beverly Hills, Glendale and San Fernando, the two purifying treatments are necessary to prevent beach pollution. By going one inexpensive and simple treatment further, Bush believes that most of the lost waste water, some 280 million gallons a day, could be saved.

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CAIRNS & BRO., Inc. — Allwood, Clifton, N. J.

AYER, MASS.

Continued from page 993

These sheds were piled to the roof with discarded Navy rope which this firm reprocessed.

With the breaking of the sprinkler lines, operating pressure on the town water system took a serious drop, although the system would normally be considered fairly adequate for a community the size of Ayer. The demand of this situation quickly overtaxed it. Then, to make matters worse, the power transformer substation on tannery property burned out, cutting off the power to the town pumping station which would have supplemented the gravity supply from the elevated storage. Fortunately, some years ago when the tanning company paved a large area south of the plant for parking, the pavement was continued to the shores of Grove Pond which made this source of water available to pumpers at draft.

With the involvement of the rope plant, the next building to go was a dwelling off Forest Street, located only a few feet from the doomed factory building.

From here, fire jumped to dwellings on both sides of Forest Street. After completely destroying six more dwellings the fire was stopped at this point.

It would be impossible to obtain an accurate detailed account of the actual fire fighting operation, for it was a case of each incoming company picking a spot that looked the worst and throwing everything they had at it. Excellent work was done by some of the small departments in knocking out spot fires with small lines and booster tanks. The flat-roofed mercantile blocks on Main Street were all laddered and men were stationed on these roofs with small lines to douse heavy flaming brands carried by the wind. At 10:00 p.m., the fire was under control, but mopping-up operations lasted several days. It was necessary to use heavy earth-moving machinery to remove tons of smouldering rope to a distant swamp.

Army sends help

Major General William J. Verbeck, USA, commanding officer of Fort Devens, located little more than a mile from the scene, made use of every facility at his command to render assistance. In addition to the post fire department, he dispatched ambulances and a detail of 600 soldiers who threw a cordon around the fire grounds to keep back the curious attracted to the scene by the radio and television news flashes and the movement of fire apparatus over the main highways. He also supplied fuel for the 25 pumpers that were operating at one time. A command post was set up at the corner of Forest and Grove Streets, while a radio-equipped helicopter hovered directly over the fire grounds keeping the command post constantly informed as to overall developments. The hospital facilities at the fort were made available for the treatment of the injured which included 11 firemen, three soldiers and three civilians, none serious. Provision was also made to care for the homeless by providing food and shelter for them on the post.

The loss of the Hartnett Tanning Company dealt a severe blow to the economy of the town, as they were the largest employers, with about 450 workers. They were considered a model company, paying the highest wages of any similar operation in the area. Twice a year they distributed one-third of the company profit among the employees. Although the buildings were old, equipment was most modern which accounts for the high monetary loss in this occupancy. The rope processing plant employed about 50 people. □□

AUTOCALL FIRE ALARM SYSTEM SAFEGUARDS NEW BANK OF GEORGIA BUILDING

This modern new 31-story commercial building in the heart of Atlanta is unique. In addition to being the tallest building in the southeast, it is the highest reinforced concrete structure in the U.S.A.

Equally modern is its fire protection system. 61 strategically located fire alarm stations combine with an Autocall DNS system with Annunciator Panel for instant and continuous alarm. This control panel visually shows the floor of the originating signal for immediate fire-fighting action.

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Among the buffs

By PAUL DITZEL

MEMBERS of Jersey City's Gong Club, Inc., are double-checking their clubhouse fire insurance policy following another multiple alarm near their quarters. Gongers Jack Cole and Henry Haines were cleaning up their mobile canteen after returning from a two-alarm loft blaze at 90 Montgomery Street when Buff Haines smelled smoke.

The fire was in the basement of a next-door building. Haines snapped the hook and together with Cole assisted in evacuating families from the building until firemen arrived. By then the cellar blaze was spreading fast and a deuce was pulled. Acting Chief Jules Rifflard subsequently determined that the fire was started by children who knocked over a candle while selecting wood to build a clubhouse.

Buff Cole, who is a charter member of the Gong Club, recalls that on December 19, 1958, a three-alarm fire damaged a store across from the canteen headquarters. (He also recalls he once broke his leg chasing a fire engine but considers such ill fortune a hazard of the trade.)

The club, headquartered at 244 Bay Street, recently published a picture-filled pamphlet which outlines the organization's activities and tells of its history. The Gong Club hopes to replace its canteen, a 1941 bread truck, with a more modern rig.

Of interest to buff clubs across the country is the fact that part of the Gongers operation is met by one dollar donations from all Jersey City firemen who are, in turn, associate members. Many police department members also are contributors. The club is a nonprofit organization. All money contributions to it are tax-deductible as the Gong Club has obtained required classification from the Internal Revenue Department.

On the other side of the nation, Matthew Kells, 10022 North 16th Drive, Sunnyslope, Ariz., reports the organization of a fire fan club there, the "2-11 Association of Phoenix Fire Buffs." Kells was named chief and Robert Guilbig, secretary.

"The organization was formed to bring together persons interested in the science of fire fighting," says Chief Kells. "While members would not act as firemen except on emergency request by fire department officials, they are pledged to assist fire departments in other ways."

Kells says a project is under way to obtain a floodlight trailer truck for fire department use. The organization's present membership is 17 and a drive for more memberships will be completed this

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autumn. Membership categories are divided into active, associate, and honorary classes. Kells said dues are minimal. The Phoenix organization meets on the first Wednesday of each month.

In Grand Rapids, Michigan, Robert J. Barber, president of the 321 Association, Weston and LaGrave, reports on a recent turnout of the association's rig. The 321'ers responded when flames involved 5,000 cords of wood in the yards of the American Excelsior Corporation at the edge of the city. Early-arriving members assisted in moving hose and setting up deluge guns.

The association's coach, a bus donated by the local public transportation utility, was at the scene for six hours during which time retired Fire Captain Erwin Johnson did yeoman duty in serving 1,000 cups of coffee, together with quantities of bakery and dairy products donated by local firms. President Barber says the association responds to alarms at the specific order of the fire chief.

Visiting in Los Angeles recently was John Weisberger, buff extraordinaire and honorary assistant chief of the New York City Fire Department. John has been a reporter for the New York *Journal American* for 33 years. His trip west took him to San Francisco where Chief Bill Murray rolled out the you-know-what and telephoned ahead to Chief Bill Miller of Los Angeles who did the same by way of this column's good friend, Assistant Fire Chief F. W. Moore, who met Chief Weisberger's plane at International Airport.

Please continue to send your news notes and comments to me at 4234 Don Diablo Drive, Los Angeles 8, Calif. Regretfully, letters cannot be answered.

□□

August Fire Losses

Estimated fire losses in the United States during August amounted to $91,633,000, the National Board of Fire Underwriters reported.

This $91,633,000 loss represents an increase of 1.8 per cent over $90,037,000 reported for August 1960, and a decrease of 1.6 per cent under losses of $93,113,000 for July of this year, according to Lewis A. Vincent, NBFU's general manager.

Losses for the first eight months of 1961 now total $819,763,000, an increase of 9.7 per cent from the first eight months of 1960, when they amounted to $747,006,000.

These estimated losses include an allowance for uninsured and unreported losses.

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Fire colleges

Morris County Fire School—Nov. 7—Ventilation, Florham Park Fire Department; Dec. 5—Panel Discussion, Denville Fire Department. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

New Jersey State Fire College—Nov. 17-19—**Fire Officers Training Course.** To be held at the National Guard Training Center, Sea Girt, N. J. For information, write Robert L. Tarbox, Director, Industrial and Fire Division, New Jersey State Safety Council, 24 Branford Place, Newark 2, N. J.

Peacetime Radiation Fire Instructors School—Nov. 27-Dec. 1 at Richmond, Va. This school is for approved fire instructors only. For information, write R. Lawrence Oliver, State Department of Education, Trade and Industrial Service, P. O. Box 657, Harrisonburg, Va.

Pennsylvania State Firemen's Training School—Nov. 13-17, **Advanced Fire Fighting,** Nov. 25, **Week-End Special.** All courses will be held at Training School in Lewistown. For information, write Art Espey, Director, P. O. Box 631, Lewistown.

South Carolina Fire Fighter Training Service. Regional schools to be held as follows: Nov. 6-10, Mauldin; Nov. 13-17, Calhoun Falls; Nov. 20-24, Jackson; Nov. 27-Dec. 1, Hill Top, Spartanburg; Dec. 11-15, Metropolitan Sub. District B. For information, write H. B. Wells, Instructor, Route 1, Box 119, Prosperity, S. C.

University of Miami Fire Investigation and Subrogation Seminar—Nov. 27-Dec. 1 at the Carillon Hotel, Miami Beach, Fla. For information write Dr. Dan Steinhoff, Jr., Dean, Adult Education, University of Miami, Coral Gables, Fla. □□

SUPERMARKET CONSTRUCTION

Continued from page 1007

all. If the building is built as a single unit, the roof may be of wood truss construction. As a rule, there is not too large a hanging ceiling in this older type of store.

Look for a parapet between the store and adjoining buildings. This will indicate the party wall is carried on up through the roof and ends in the parapet. This makes for a good fire stop between buildings, provided the ceiling joists are not overlapped as mentioned before. At times, even with parapet construction, and where such overlapping exists, the mortar between the joists deteriorates and falls out. This leaves an open space for fire to pass through and into the adjoining building.

If there are dwelling units

Where there are dwelling units above the store, occupants may be in danger should fire from the supermarket get into the store ceiling or sidewalls. Involvement of these latter areas is fairly common with cellar fires in supermarkets. Remember in older stores a good part of the utility area or work space is in the cellar; and that 78 per cent of fires in supermarkets start in the utility areas. Where fire does involve the ceiling or sidewalls, the occupants of the apartments above and in adjoining buildings sometimes are in danger and should be removed in the early stages. With a hot fire in the cellar extending into ceilings and side walls, the stairway (usually adjacent to the front entrance to the supermarket) leading to the dwelling areas can become untenable from smoke and heat in short order.

Interior of store

Partitions, ceiling materials and wall finishes are pretty much the same as in the newer supermarkets, because in order to compete, older stores have had to remodel to present an attractive appearance. Conditions may be a bit more crowded with overstocking because of limited space. Exit provisions will be similar to the newer stores with the same problems.

These older stores do not present the hazard of great, unbroken areas so prevalent in the new supermarkets with their large and varied fire loading. The old store does not often have the large truss roof with unprotected metal structural members. In general, the large, modern supermarket, while well designed for clean, attractive sales space, does not resist fire as well as the older types. □□

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OBITUARIES

Ex-Chief T. H. Donnelly

Thomas H. Donnelly, 62, retired chief of the West Hartford, Conn., Fire Department, died August 31 in his home at Narragansett Pier, R. I. He retired in 1956 after 35 years of service in West Hartford.

Born in New London, he was a member of that city's fire department before moving to West Hartford, where he joined the department in 1920. At the time of his death he was a member of the Narragansett Pier Volunteer Fire Department.

Chief Donnelly was a member of the New England Division, International Association of Fire Chiefs; the New England Fire Chiefs Association; and the Connecticut State Firemen's Association. He is survived by his widow and three sons. One son, William S. Donnelly, is a member of the Hartford Fire Department.

Tom Magner

George H. Moffatt

George H. Moffatt, veteran John Bean engineer in charge of fire apparatus research and development, died at a Lansing, Mich., hospital on August 23, following a heart attack. He joined the John Bean Division of FMC Corporation on November 1, 1929 and was named chief engineer of the fire apparatus section in 1953.

In addition to supervising engineering in connection with high-pressure fog apparatus, he was responsible for the research and engineering of volume pumpers, aerial ladders and industrial in-plant units. He was a member of the Alert Firemen's Association and the Box 23 Club.

Grover D. Harris

Grover D. Harris, 68, head of the Resuscitator-Inhalator Division, Oxequip-Oxygen Equipment and Service Company, Chicago, died August 28 of a heart condition at Billings Hospital.

Mr. Harris pioneered and developed many items in resuscitation and inhalation equipment. He was well known as a trainer, promoter and authority on life saving equipment. He served fire departments and rescue services throughout the country as a supplier of these devices and acted as an advisor in the proper use of resuscitators and inhalators.

Chief Ewald A. Bode

Ewald A. Bode, 59, deputy chief of the Toledo, Ohio, Fire Department, died recently as a result of burns he received in a fatal truck explosion on July 28th. Chief Bode was in charge of the first-arriving crews responding to that fire. He had been a fireman since May 1925, with promotions to lieutenant in 1937, captain in 1939, district chief in 1950, and to his present position on January 1, 1953. In 1951, he was named head of the Toledo Civil Defense auxiliary fire fighters and in 1957, was named to the board of directors, Ohio Fire Chiefs Association.

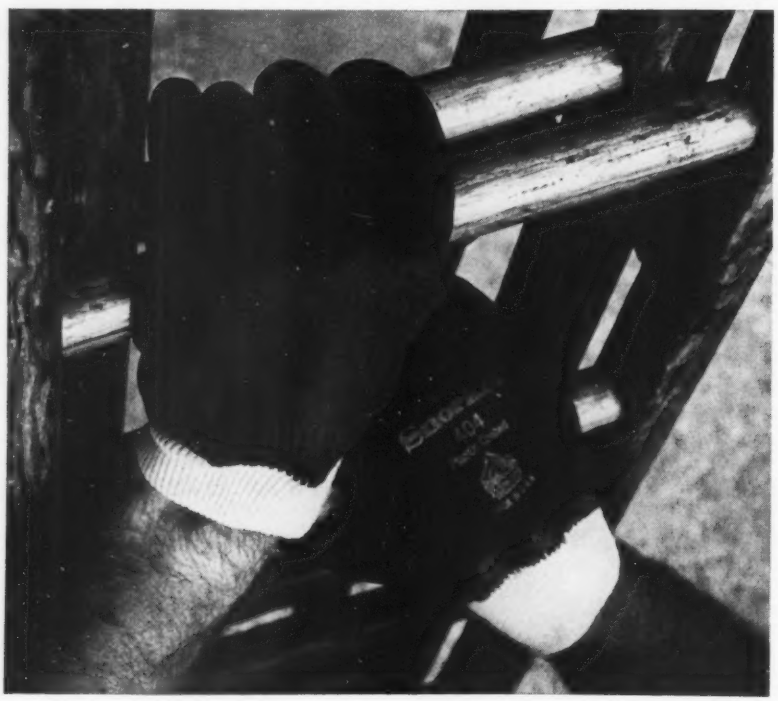
John Dennis

L. E. Roberts

Leslie E. Roberts, 54, former chairman of the board, the Seagrave Corporation, died recently at University Hospital, New York City, following a long illness. He had been forced by ill health to relinquish his duties as chairman last January but continued until shortly before his death as a member of the board and a consultant. □□

NBFU Film Wins Merit Award

"The Science of Fire," the National Board of Fire Underwriters' newest educational film, has been awarded a certificate of merit by the Vancouver Festival Society. The 20-minute 16mm color film was selected for presentation in the science and agriculture category of documentary films at the society's fourth annual International Film Festival held in Vancouver, B. C.



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Edmont
JOB-FITTED GLOVES

FIRE-POLICE INTEGRATION

Continued from page 998

police with hand fire extinguishers cannot put out the fire, the arrival of a few firemen a bit later has allowed the fire to spread to where the job of extinguishment is much greater. Good clothing of police on duty must be protected by fire protective clothing. Donning it also takes time.

One important phase of fire service is inspection of properties to locate fire hazards and work for their elimination by property owners. This takes part of the fire force out of their stations daily. This work also familiarizes the men with the physical makeup of the premises so if they are called to fight fire there, they know the location of danger spots, stairs, valves, switches, etc., and thus can facilitate fire fighting and safeguard themselves. Thus inspections serve a dual purpose.

Home inspections

In recent years, a new fire service has gained impetus, that of home inspections by firemen. The entire fire force of a piece of fire apparatus goes into neighborhoods and asks permission of each householder to inspect his dwelling. Many home fire hazards are thus found. Many of these hazards are corrected and most likely much property and many lives are saved through this hazard elimination. This is real service to the taxpayer, for it betters his property. The firemen are "in service" via their radio.

If firemen are required to do police duty, inspection work must suffer or be discontinued. This is a disservice to the community. To train and qualify men to perform both kinds of department activities usually leads up to a force of men that are not effective, efficient and competent in either activity. This has a serious effect on the morale, discipline, and personal interest of both forces.

Fire insurance rates for any community are established by an evaluation of the fire defenses available—this work is done by the National Board of Fire Underwriters or by state fire inspection bureaus (for the smaller towns). The grading schedule used is based upon an independent and separate fire fighting force, with adequate equipment at its disposal, and a high degree of training of its manpower. An integrated police-fire force will certainly lead to a low evaluation of the fire defenses of the town and therefore the establishment of a higher fire insurance rate level. The NBFU is not militantly against integration. They merely inspect the towns of the United States and their records show that the

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Photographed at Chelmsford, Mass. Fire Department. Fire Chief Ernest Byam, Firemen Donald Gray, Allen Mello.

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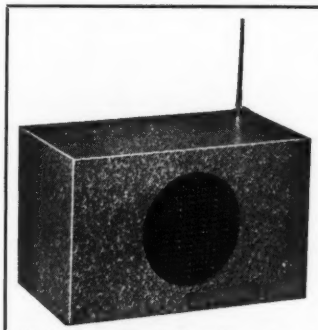

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fire service suffers and is less than standard when they deal with integrated services.

Not a new idea

The idea of police-fire integration is not new—the International Association of Fire Chiefs passed resolutions against it over 80 years ago. If combining the police and fire departments had any real advantages as are claimed for it, in this space of 80 years, the principle of integration would be virtually universal over the United States by now.

A combined police-fire force will probably work in a community of about 7,500 population, which is essentially residential in nature, with little or no mercantile or business property, with no industry whatsoever and no major school or hospital structures. However, even in this case, it would be much better to have a small paid police force and a volunteer fire department and to keep the two services separate. Experience has shown that when a combined force is headed up by a fire officer, the police service suffers; if it is headed up by a police officer, the fire service suffers; if it is headed up by a nonprofessional, both services suffer.

The California cities of Buena Park, Monterey Park, Hawthorn, Sanger and San Marino all had integrated departments in the early 50's. All of them now have changed back to separate departments. Evanston, Ill., has tried it and even offered extra pay to police who would take fire training. Many police have refused to take the extra work there. The general consensus of professionals in both services is that if a town's setup is such that police can be spared to train for and fight fire without impairing police services and protection, then there are too many police on that force in the first place.

The National Fire Protection Association has stated, "Police work involves dealing with people and the handling of situations which cannot be put off. Much of a fire department's work involves doing things before fire occurs. This includes fire prevention inspection work, keeping apparatus in order, training men in fire techniques, and the use of suitable protective clothing and protective equipment. While both firemen and policemen wear blue uniforms, a man has to change more than his hat to change from serving as a policeman to a fireman."

As mutual fire insurance and casualty insurance organizations, we are vitally interested in keeping our losses from fire and casualty incidents to as low a dollar figure as is humanly possible. Every year the annual fire loss figures get bigger and bigger—this is to be expected somewhat because each year there are more people to start fires and more properties in which to have fires—and we must pay for these losses. As we see it, anything which would tend in any way to depreciate the efficiency of either fire or police work under any and all circumstances can only increase our loss ratios. We feel that the integrated police-fire service is based too much on the premise that the average fire is a small fire. But when a large fire occurs, we suffer because the combined protection service is not geared to handle it effectively. We feel that the best answer lies in two separate departments of police and fire, as large as the community can afford, with highly trained chief officers and a well-trained complement of manpower, furnished with the latest apparatus and implements of their respective professions.

An old Civil War general officer once attributed his success to "gettin' thar fustest with the mostest." We, as insurance men interested in losses, would rather see fewer fire stations in a municipality, but with those stations having good modern apparatus manned by a full complement of firemen as provided for in the "Grading Schedule for Cities and Towns." The town which has a plethora of fire apparatus with only one or two men riding each one has nothing more than a group of high-priced taxicabs.

We have seen towns where a first-alarm response to a residential fire is two engines and one ladder company. The average fire engine will pump 750 gpm; this is three standard 2½-inch fire hose streams or six to seven standard 1½-inch hose streams. One engine should be able to handle almost any dwelling fire if its water potential is used 100 per cent. Each engine carries enough ladder equipment to reach any dwelling window or roof. A one-engine response with an officer and six men aboard is better than a three-piece response with only two men aboard each piece. This is where drilling as a "team" with full complements of personnel begins to pay dividends.

Resuscitation

Firemen perform another public service—resuscitation. Since they are subject to severe smoke inhalation at almost every fire, they have become experts in resuscitation and inhalator work to protect themselves. Many departments have now extended this worthwhile service to their citizens. Hundreds are alive today because of this service as it is constantly "on call"

to anyone. Diminution of fire personnel due to integration might curtail this service to a community.

We can see some savings possible to a town in integrating its *administrative* staffs of these two services. Operation of radio equipment, record keeping, personnel files and the like could be combined—in fact, this type of work could be handled by nonprofessional civilians and not trained police or firemen. At the "action" level, we feel that the best interests of the citizens, the municipality and the insurance company is best served by separate departments. □□

White Lights Reserved For Connecticut Fire Rigs

The Connecticut State Legislature recently approved a bill which reserves clear white rotating beacon lights for fire apparatus, and Governor John Dempsey signed it into law.

Over a year ago Major Carroll F. Shaw, state fire marshal, reported to the fire chiefs his observations of tests conducted in the midwest with white lights versus red and blue. Following a demonstration of the clear light at the 1960 fire chiefs conference, legislation was prepared and advanced by the chiefs.

The Deep River Fire Department is reported to be the first in the state to completely equip its vehicles with white lights. Chief Donald Moore reports his belief that the white light increases the safety factor of moving fire apparatus.

G. W. Whelen

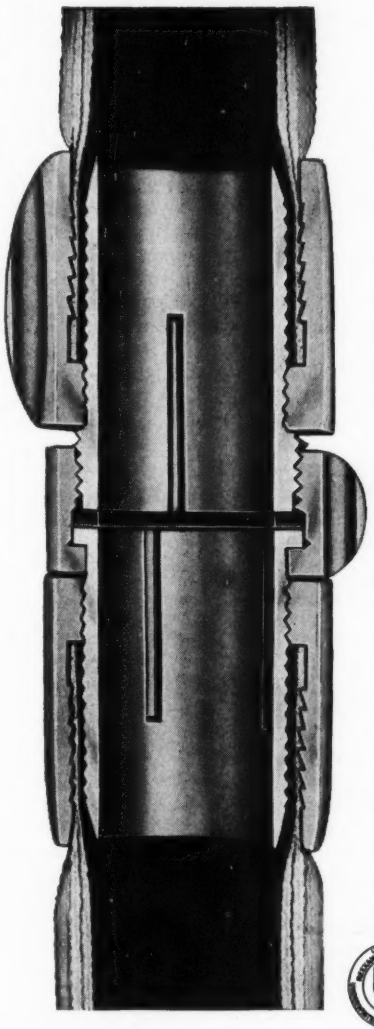
RETIREMENT COMMUNITY

Continued from page 1003

with the provision that 250,000 gallons be constantly maintained for fire protection. The second 30,000-gallon tank supplies water for domestic use of residents, but 25,000 gallons are constantly kept in reserve for the fire system.

Water for these reservoirs is supplied from three sources: The City of San Francisco Hetch Hetchy water system, the California Water Service Co., and from the Bear Gulch watershed, piped from the hills above the project. Water is stored in a lake above nearby Atherton, and is piped to the private reservoirs in such a way that the level of the main reservoir can never fall below the required 250,000-gallon level.

The separate 30,000-gallon water tank has an emergency float valve which releases through a 6-inch pipe to maintain the level of the larger tank in case of emergency. The basic



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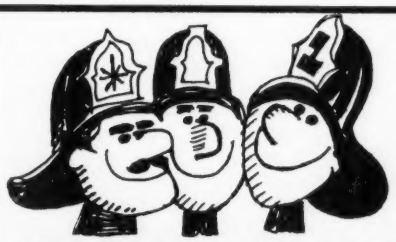

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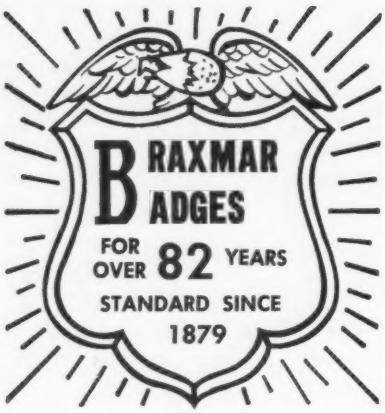

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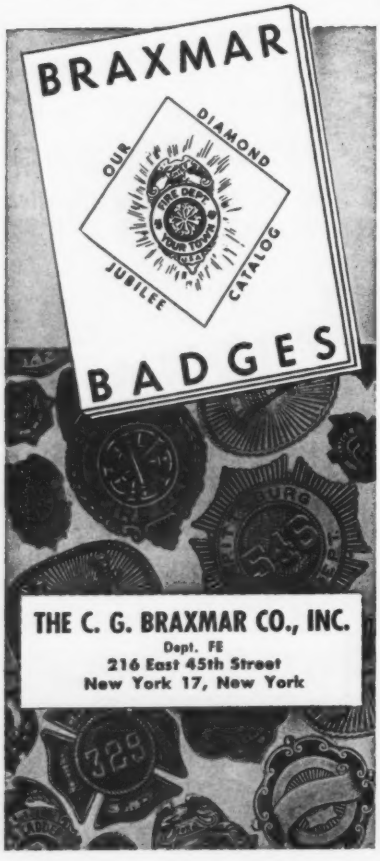


system designed by Braal is provided by a 10-inch main from the reservoirs to an 8-inch loop system which completely encircles the building project. Hydrants are placed at 250-foot intervals in the loop about the property. Each hydrant has one 4½-inch steamer outlet and two NST 2½-inch standard outlets.

In addition to this perimeter system, a 12-inch California Water Service main has been installed at the entrance of The Sequoias. This has a 4½-inch hydrant to supplement interior water flow. From this hydrant, 500 feet of emergency lines can be laid to a water connection center, which includes the automatic sprinkler system of the main building, and an exterior wet standpipe system, plus pumping water into all water facilities including the private reservoirs on the site.

Water control centers

There are two main water control centers, each provided with water pressure controls which can pump into 6-inch mains within the building complex. These are equipped with 4-inch laterals with six hydrants and six interior preconnected hose cabinets which can reach to any specific point within the project. The hose cabinets each have 100 feet of hose equipped with industrial fog nozzles, and contain an additional 100 feet of 1½-inch hose for reserve use. All hose cabinets also contain fire department all-purpose spanners and 2½ to 1½-inch NST adapters. This provides for extreme speed in handling hose connections. All standpipes accommodate both 2½-inch and 1½-inch lines.

This arrangement makes it possible to use any number or combination of hydrants or hose cabinets. Pumpers may be used at either of the water control centers, and pressures may be controlled to all parts of the building complex. Aside from the hydrant at the main entrance to The Sequoias, the whole fire system has been built at no public expense.

Automatic heat-actuated fire alarms extend throughout the project, except in the main building, which is equipped with a pressurized sprinkling system. The building complex is equipped with a special code system which gives the exact location of fire to headquarters station in Woodside, from whence all equipment is radio-dispatched.

The nearest engine company is located two minutes from the site, and headquarters station in Woodside can cover with extra equipment as needed within five minutes.

In spite of the complex problems involved, the solution has proven to be a masterpiece of planning, and The Sequoias has a very low fire hazard. The close cooperation of all concerned, and the detailed attention given to planning by the architects, and by Chief Volpiano and Inspector Getchell who are responsible for the design of the interior fire system, have provided protection for the residents of The Sequoias which compares favorably with any urban system in the nation. □□

GRAIN ELEVATOR FIRE

Continued from page 999

inch line. Independence Hill stretched the same layout. Cedar Lake stretched a 2½-inch line northeast of the elevator employing a 2½-inch fog nozzle and later, pulled off a 1½-inch line to fight some roof fires in the area near the hydrant.

Merrillville pulled in between the elevator and Cedar Lake to protect the Mobil Oil bulk plant, the Hub Tire shop, the elevator warehouse and to water down a corn cob pile. Cedar Lake relayed water through 2½-inch hose to Merrillville which stretched two lines of 1½-inch hose.

All transmissions from the base station pertaining to the trucks that were not hooked to a hydrant were handled through the Crown Point (Center Township pumper) because the outside trucks were not familiar with the street layout. This pumper, manned by an off-duty driver who happened to be passing by the station when the siren sounded, handled all relay transmissions to the other trucks. This system of moving these trucks around seemed best for this type of fire and the saving of 17 homes is credited to it. There were four trucks patrolling for a distance of three or four blocks north and east of the elevator while the fire was at its peak.

The Gary Civil Defense Fire Department came in at 1:30 p.m. to assist. It responded with a high-pressure unit, pumper and a tractor (Army surplus prime mover). Traffic control was handled by the Crown Point Police Department, Lake County Sheriff's Office, Civil Defense Police from Gary and the Civil Defense Communications Unit of Lake County.

After a large fire the Crown Point department checks with the Crown Point Municipal Water Plant to see how much water was employed. It was reported that a volume in excess of 200,000 gallons of water was used to control this fire.

The office-scale house of the elevator was not damaged by fire, nor were any other places of business. Hub

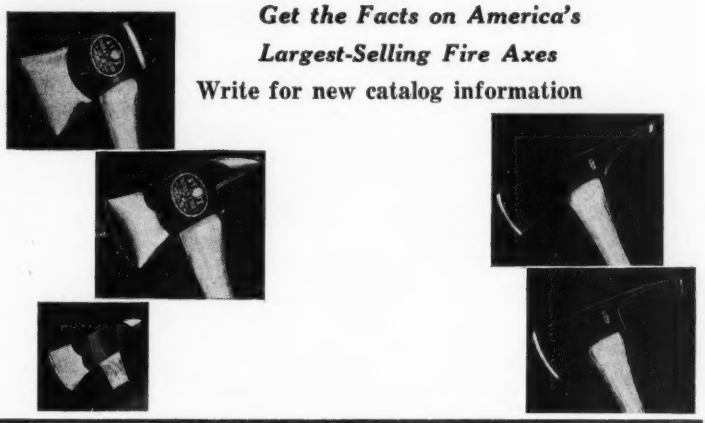
Tire had minor damage to plastic skylights in the roof and Root Lumber Co. had three large picture windows cracked by the heat.

Responding Departments

11:37 a.m.—First call—first-aid truck and 750-gpm pumper
11:40 a.m.—Cedar Lake—500-gpm pumper
11:40 a.m.—Independence Hill—500-gpm pumper and 1,000-gallon tanker
11:40 a.m.—Merrillville—500-gpm pumper and first-aid truck
11:45 a.m.—Crown Point (Center Township owned)—500-gpm pumper
11:50 a.m.—Lake Dale—500-gpm pumper and 1,000-gallon tanker
12:20 p.m.—Ainsworth - Deep River—500-gpm pumper moved into Merrillville station for Ross Township stand-by
12:20 p.m.—New Elliott—500-gpm pumper, 2,000-gallon tanker and first-aid truck
12:20 p.m.—Merrillville—1,000-gallon tanker
12:50 p.m.—Crown Point (Center Township)—1,000-gallon tanker
1:30 p.m.—Gary Civil Defense pumper and high-pressure unit (responded on their own accord)

Insurance adjusters and Pennsylvania Railroad officials came to the scene of the fire on Monday, May 29, to get matters settled. The grain was salvaged by two Crown Point area farmers. The latter did not want the grain wet. For this reason, and to protect other business places from flying embers, Crown Point made several trips back to the fire site to wet down.

This fire gave the mutual aid program of the Lake County Fire Service, Inc. one of its severest tests and its successful employment proved gratifying to all fire departments concerned. All apparatus of the Lake County Fire Service, Inc. are radio-equipped on 33.82 mc. The base station, located at the Crown Point Fire Department, is manned 24 hours a day. The Fire Service covers approximately 500 square miles in Lake, Porter, Newton Counties and eastern Illinois near the Indiana-Illinois state lines. □□



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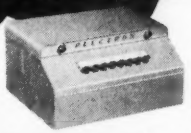

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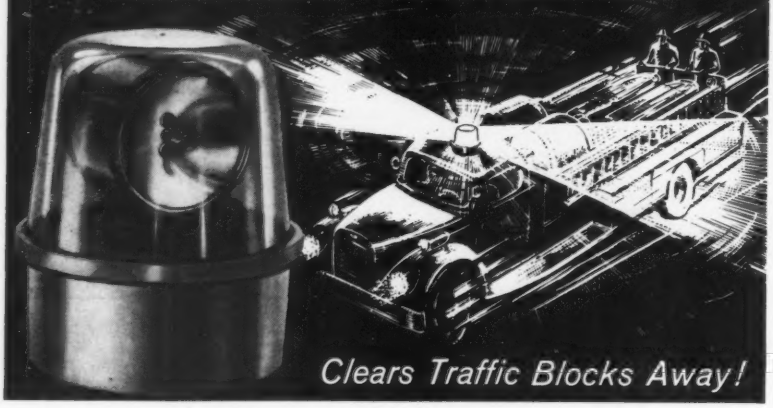

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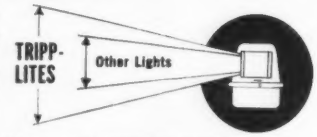

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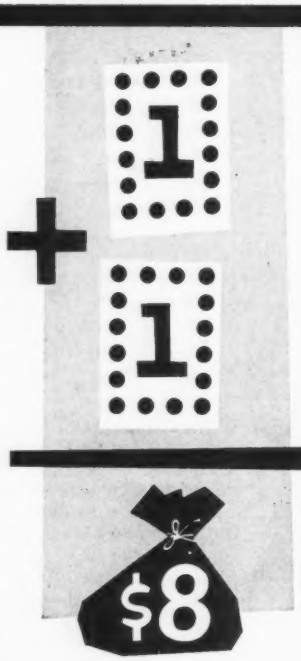

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PUBLICATIONS

FIRE PREVENTION AND SAFETY, a teaching manual for elementary schools has been designed to provide teachers with ready-to-use resource materials that can be integrated with history, science, geography, health and safety courses. Prepared by the editors of *Grade Teachers Magazine* for the Hartford Insurance Group, contents have been reviewed and commended by the International Association of Fire Chiefs. It is being distributed free to teachers in the third through the fifth grades by Hartford agents who sponsor the Junior Fire Marshal Program.

EMERGENCY LIGHTING HANDBOOK, a 96-page handbook on emergency lighting covering installation considerations, equipment specifications and maintenance requirements is available from Electric Cord Company. A hardbound textbook, it is edited by a professional engineer and is designed to provide basic information on the problem of emergency lighting to consultants, architects, engineers, and others involved in building construction, design, or rehabilitation. Copies at $2.00 each may be ordered direct from the company's Handbook Department, 432 Plane Street, Newark 2, N. J.

HOSPITAL FIRE SAFETY DESIGN STANDARD. This 16-page office-duplicated publication of the Office of the Ontario Fire Marshal in cooperation with the Ontario Hospital Services Commission, spells out minimum standards which must be incorporated in hospitals constructed in the Province. These standards will be used by the Fire Marshal's Office for reviewing plans of all public and private hospitals as a condition of approval by the Hospital Commission.

AIR ATTACK ON FOREST FIRES. This 32-page Agricultural Information Bulletin 229, published by the U. S. Department of Agriculture, Forest Service, gives general information on the use of aircraft and airborne methods of fire fighting. Copies may be purchased from the U. S. Government Printing Office, Washington 25, D. C., at 30 cents.

STUDLESS METAL LATH AND PLASTER TWO-INCH SOLID PARTITIONS, a revision of Technical Bulletin No. 2, is available free from the Metal Lath Manufacturers' Association, Engineers Building, Cleveland 14, Ohio. Last revised in 1956, the new edition incorporates recent specification amendments, has a revised layout of detailed drawings for easier use, and contains data not available four years ago. Special emphasis is put on such qualities as rigidity, durability and fire safety of the partitions. □□

Apparatus and Station Destroyed by Fire

All that remains of Peabody Engine 5 and the station which was built in the 19th Century. The 750-gpm pumper was a 1942 model

A devastating fire soared through the quarters of Engine 5 on Lynn Street, Peabody, Mass., on April 14. Asleep on the second floor at the time were Fire Fighters Frank D'Amico and Donald McCauley. Fireman McCauley was awakened by a severe coughing spell only to find his room enveloped with smoke. Arousing his partner, they tried to reach the apparatus floor by the pole and stairs but were driven back by raging flames. Using their only alternative, both men jumped out second-floor windows and escaped with minor injuries.

McCauley pulled Box 18 located outside the station and together the firemen warned the occupants of adjacent houses. Deputy Chief Edward O'Brien arrived with first-alarm companies and immediately transmitted a second alarm. After a stiff battle, fire fighters, directed by Chief Arthur C. Flynn, confined the flames to the firehouse, two cars owned by the firemen and the rear of an adjacent house. After the embers cooled, the body of a man was found and later identified by fingerprints. He was not a member of the fire department. Cause of the fire remains a mystery.

Thomas F. Brophy

Petition FCC for Public Safety TV Channel

The International Association of Fire Chiefs and the International Municipal Signal Association have petitioned the Federal Communications Commission to allocate a single UHF television channel on a nationwide basis to the public safety service. The joint petition pointed out that television can be employed to provide fire and police instructions to personnel located in fire and police stations, centralized police line-up operations and in some cases, on-the-scene surveillance of fire operations.

The petition recalled that arrangements have been worked out with the commission and representatives of the fire, police and education departments of the City of New York to participate with the commission in the use of the FCC's experimental UHF TV station in New York. It was further stated that television will assist in vastly improved in-service training and eliminate the necessity for released-time training which compromises the instant availability of personnel for duty.

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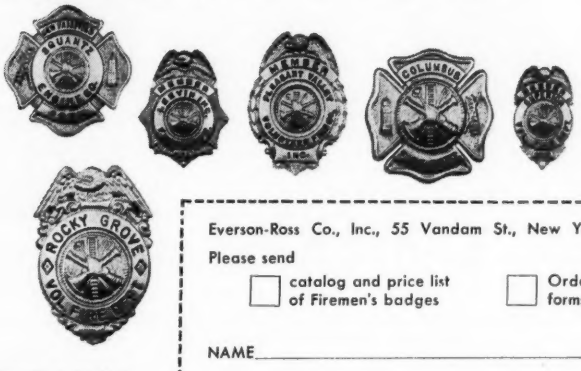

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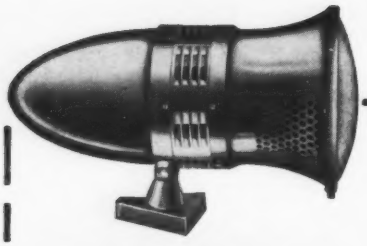

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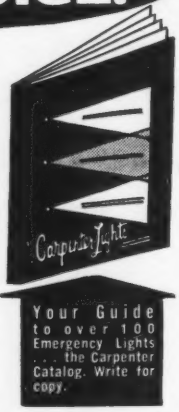

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Annual reports

Rochester, N. Y.—Chief George L. Holzschuh reports that the department responded to a total of 4,647 alarms, of which 826 were for building fires. Fire losses amounted to $803,850.25, as compared to $386,016.33 in 1959. Fire Marshal Earl J. Webber reports that fire deaths dropped from the record high of 22 in 1959, to 11 in 1960. Careless smokers were blamed for 214 of the 826 building fires reported.

New Haven, Conn.—Chief Thomas J. Collins reports that fire took the lives of seven persons during 1960. Fire losses amounted to $926,855.33, an increase of $310,993.97 over 1959. Chief Collins attributes this rise to an 18 per cent increase in fires, plus four large-loss fires. He recommends that the radio-controlled traffic light system be extended to the entire city, since its short existence has already proven its value.

Williamsburg, Va.—Fire Marshal Elliott W. Jayne reports 347 alarms. Although the total estimated evaluation of property involved in fire is $7,795,700, the total fire loss was only $30,573.

Oakland, Calif. — Chief James J. Sweeney, Jr., reports 3,473 fires caused total losses of $2,024,963, during the fiscal year ending June 30, 1960.

California Fire Training Program, State Department of Education—Supervisor of Fire Training Thomas S. Ward reports that 188 training officers registered for the seventh annual Fire Training Officers Workshop, and 231 arson investigators, fire marshals, police inspectors and investigators, fire department officers and personnel from 12 states attended the seventh annual Arson and Fire Investigation Seminar at the University of California, Berkeley.

Alexandria, Va. — Chief Bernard J. Padgett reports 5,141 alarms received during 1960, an increase of 24 over 1959. Of these alarms, 934 were for fires, 475 of these in buildings. Fire losses decreased from $240,943.55 in 1959 to $125,283.33. Chief Padgett devotes a section of his report to an analysis of population shifts and their effect on fires, and applies his findings to Alexandria.

Lima, Ohio—Chief Walter L. Hydaker reports that the department added 15 new men during 1960 which made possible a second engine company in the central station. One new 1,000-gpm pumper was received and a second one ordered.

Painesville, Ohio—Chief Eugene Tuthill reports 413 responses in the city and 141 in Painesville Township. There was a total of 279 fires in both areas, with total losses of $149,136.26. □□

Questions & Answers

Explosive Limits of Gasoline

To the Editor:

Research among the available literature concerning the explosive limits of gasoline has led to some confusion. It is variously quoted as being 1.3 to 6, 1.4 to 6 and 1.4 to 7.6. Which is the correct statement?

R. B.

Answer: The limits generally accepted are 1.4 to 7.6 as published in bulletins of the National Board of Fire Underwriters and the National Fire Protection Association's "Handbook of Fire Protection." However, this does not imply that the other statements are incorrect.

Trying to pin down the exact explosive limits of gasoline can be a trying experience for a research chemist, let alone a fireman. According to information available to us, the results may depend on test temperature, atmospheric pressure, field where crude oil was originally obtained, refining methods, additives employed, etc. While the generally accepted limits may not be exact in a given test instance, they are considered reasonable.

Shutoff Friction Loss

To The Editor:

How can I figure the friction loss when employing an independent shutoff on a hose line. The type I refer to is called the "Gizmo."

P. K.

Answer: According to the manufacturer the loss is equivalent to that of adding another length of hose to the line.

Aluminized Clothing

To the Editor:

Is it necessary to wear masks when employing aluminized suits?

Are there any special precautions advised when using these suits?

P. H. C.

Answer: The conditions under which the suits are employed determine whether breathing apparatus is required. If entry into a hot fire is necessary, then this equipment is advised as the fire readily exhausts available oxygen. Suits made for entry purposes provide over-all head-to-toe protection and the only air available is in the suit. Breathing may quickly become difficult unless a supply of air or oxygen is provided.

Special precautions in the use of the clothing are provided by the manufacturers. These generally concern whether the material is fabricated for approach, proximity or entry purposes. In general,

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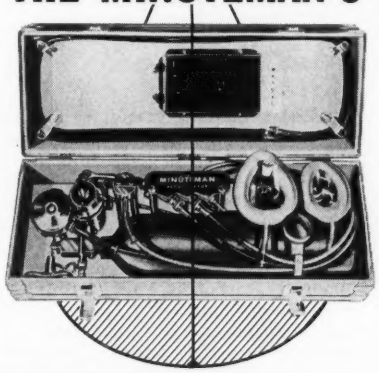

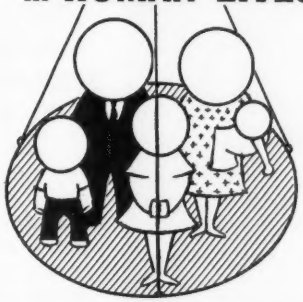

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approach suits employ rayon cloth backing and are designed to permit fire fighters to get close to a fire in its early stages to effect quick extinguishment. Proximity suits are made with a heavier backing of inorganic fibers such as asbestos and fiberglass and have a tight-knit finish. They are designed for crash crews, etc., to permit longer exposure to flame. Entry suits are designed for maximum insulation and complete protection to the wearer.

Care of the equipment is important. The suits must be kept clean and in excellent repair. For more complete information see November 1959 FIRE ENGINEERING, "Correct Use of Aluminized Clothing," page 1053.

Water Damage

To the Editor:

Recently the statment was made to me that straight stream nozzles cause greater water damage to an occupancy during a fire than do fog nozzles. Is this true?

R. P.

Answer: General statements of this type are not necessarily true. The statement must be qualified by expressing the types of nozzles compared. After all a fog nozzle rated 250 gpm at 100 psi discharges almost exactly the same quantity of water as does a 1⅛-inch tip at 45 psi. The volume discharged creates as much of the problem as does the method of delivery.

Dry Chemical Effect

To the Editor:

How does dry chemical extinguish a fire?

A. A.

Answer: Most researchers agree that the theory of interrupting the chain reaction of the fire is logical. One authority in the field has stated: "Dry chemical is believed to extinguish primarily by chemical chain reaction interruption. Cooling or diluting of reactants is believed to be a relatively minor factor." This same authority explained the action further: "A cloud of dry chemical therefore is similar to a flame arrester, in that flame cannot pass through a cloud of particles, when in proper concentration." (*A. B. Guise address, 136th meeting ACS, Atlantic City, September 1959.*)

Salt Water and Primers

To the Editor:

Should priming pumps on centrifugal pumpers be flushed after use with salt water?

P. C.

Answer: When salt water has been pumped, it is recommended practice to flush with fresh water all waterways in the pumping system after use. This includes the primer. □□

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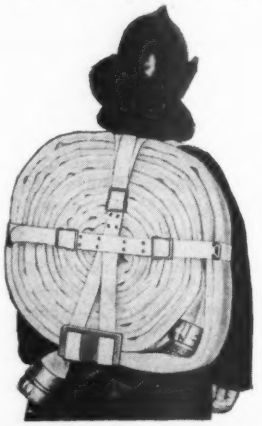

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What's burning

The following list includes fires of $10,000 and over in the United States and Canada for the period from September 1st to September 30th.

Camino, Calif.—Ripley Bros. Logging Co. and Fred Bennett Co., logging suppliers shop, damaged. Exploding metal pot.
Kelsey, Calif.—Lumber mill in El Dorado County destroyed. Forest fire.
Pittsburgh, Calif.—Television and appliance store, adjacent vacant store and barber shop, damaged.
Roseville, Calif.—Roseville Lumber Yard and three 30,000 gallon gasoline storage tanks destroyed.
Sonora, Calif.—Sylvan Lodge and three cabins 17 miles east on Highway 108, destroyed. Sparks from flue.
South San Francisco, Calif.—Sorich Bucket & Drum Co., Western Foam Products Co., and Dempnock Lettering Co., destroyed.
Sutter Creek, Calif.—High School gymnasium destroyed. Forest fire.
Glendale, Colo.—Office, Bar & Lounge of Mrs. Evelyn Frankeberger, Western Saddle Co., Artificial Foliage Co. and apartments, northwest Glendale, damaged.
New London, Conn.—Howard Johnson's Restaurant damaged.
New Milford, Conn.—Building on George E. Wells & Son, Inc., poultry farm in Merryall District, destroyed.
Norwich, Conn.—Gilbert Furniture Co. store building destroyed; adjacent St. Mary's TAB society building housing Utley & Jones Pharmacy and Norwich Diocesan Charities Inc., damaged.
Wilmington, Del.—Evans & Evans warehouse destroyed.
Twin Lakes, Ga.—Resort pavilion at lake damaged.
St. Maries, Idaho—St. Maries Planer Mill destroyed.
Peoria, Ill.—H. E. Lauterbach Lumber Co. damaged.
Chesterland, Ind.—Story's Truck Shop on SR 67, housing tractors and trailers, damaged.
Indianapolis, Ind.—R. H. Gardner Wholesale Bakery Supply Co. damaged.
Indianapolis, Ind.—Superior Chevrolet, damaged. Gasoline splashed onto hot light bulb.
Harvey, Iowa—Buildings housing Harvey City Hall, Marion County State Bank and McConnell Variety & Grocery store, destroyed.
Hancock, Me.—Main plant of Cobb Box Co., Washington junction, destroyed.
Rising Sun, Md.—Barn on Clyde Van Duke farm, Route 1, destroyed.
Beverly, Mass.—Sid's Donut shop destroyed.
Beverly, Mass.—Silver Anchor Cafe and adjoining three-family dwelling destroyed.
Lunenburg, Mass.—Crafts Manufacturing Co. damaged.
Quincy, Mass.—China Star Restaurant damaged.
Clare, Mich.—Point Clare Restaurant, east on U. S. 10, damaged.
Fremont, Mich.—Jewelry store of Fred Bouwman, Kimbark Inn, Fremont State Bank, hardware store, investment firm and another jewelry store on Main St., damaged.
Harbor Beach, Mich.—North section of Wruble Elevators Inc. destroyed.
Jackson, Mich.—Kurpinski Waste Paper Works damaged. Arson suspected.
Lansing, Mich. — Apartment dwelling under construction destroyed.
Lapeer, Mich.—Fabricators Inc., manufacturers of plastic and masonite interiors for autos, destroyed.
Lowell, Mich.—Poultry house owned by R. A. Wittenbach destroyed. Lightning.
Webster Groves, Mo.—Wood processing plant of Midwest Manufacturing Co., damaged.
Center Stratford, N. H. — Century-old Foss House, dormitory at Austin-Cate Academy, destroyed.
Durham, N. H.—Three-story stable at University of New Hampshire destroyed.
Goffs Falls, N. H.—Pine Island Amusement Park damaged. Sparks from welding torch.
Spofford, N. H.—Three-story resort hotel on shores of Lake Spofford destroyed.
Bayonne, N. J.—Five warehouses owned by Goodman Warehouse Corp., destroyed.
Elizabeth, N. J.—Hobby shop and another store damaged.
Leonia, N. J.—Petite Cleaners, Inc. damaged.
Passaic, N. J.—Venue Women's Wear Shop, Passaic Sports Wear Shop and office of Dr. Bertram Roberts, dentist, and Saul Perex, lawyer, and Dundee Linoleum shop damaged.
Totowa, N. J.—Terre Seed Co. plant, Route 46, destroyed. Spontaneous ignition.
Wayne, N. J.—Tavern and an upstairs apartment being renovated destroyed.
Brunswick, N. Y.—Bryce Beverage Co. main building, housing bottling works and garage, destroyed; nearby dwelling damaged.
Byron, N. Y.—Three barns on Clark Walker farm destroyed.
Lockport, N. Y.—Lockport Mills, Inc. warehouse destroyed.
Port Crane, N. Y.—Elementary school building damaged. Propane gas explosion.
Jonesville, N. C.—Swan Creek Baptist Church and Sunday school building damaged.
Morehead City, N. C.—Summer home on Bogue Sound damaged.
Raleigh, N. C.—Hillsboro apartments damaged.
Sweetsboro, Ohio—Ben Franklin Variety Store in Sweetsboro Shopping Plaza, damaged. Short circuit.
McMinville, Ore.—Southern Pacific's trestle destroyed. Grass fire.
Portland, Ore.—Providence Lumber Co. destroyed.
Reedsport, Ore.—Umpqua Hotel destroyed.
Salem, Ore.—Williams & Hart Co. and J. I. Haas Co., hop brokers' warehouse, damaged. Cigarette.
Avondale, Pa. — Scotti's Discount Farmers'

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Market, Baltimore Pike and Route 41, London Grove, destroyed.

Belle Vernon, Pa.—Marion elementary school building destroyed.

Bradford, Pa.—Evans Roller Drum Skating Rink destroyed.

Donora, Pa.—Weiss Packing Co. damaged.

Gardners, Pa.—Feed mill destroyed.

Hazelton, Pa.—McGowan Silk Mill damaged.

Kingston Township, Pa.—Back Mountain Lumber Co. salesrooms and storage quarters damaged.

Milton, Pa.—Large barn, hogs, tractor, and other machinery, hay, straw, grain and lumber on Edward Meslener farm, RD3, destroyed.

New Milford, Pa.—Grange League Federation Cooperative service building, store, warehouse and grain elevators, destroyed.

North Orwell, Pa.—Barn on William Lemmon farm, Route 187, destroyed. Defective wiring.

Shamokin, Pa.—Alvin Simmerman Jewelry store and Western Auto Supply Co. store damaged.

Greenville, S. C.—Stewart, Merritt and Smith Clothing Store and adjoining jewelry store damaged.

Spartanburg, S. C.—F. W. Woolworth Co. store and adjacent Butler's shoe store in downtown area, damaged.

Madison, Tenn. — Building at Old Hickory Boulevard destroyed along with all property and equipment of Bohannon Flooring Service and Regan's TV shop.

Nashville, Tenn. — Building housing R. L. Eatherly Construction Co. and Uniform Rental Service, destroyed.

Fort Stockton, Tex.—Mobil Oil Co. No. 1 Sibley gas well in Coyanosa field area, damaged.

Addison, Vt.—Barn on Roland Easter farm destroyed.

Clifton Forge, Va.—Three barns, silo and cattle on Harry A. Walton Jr. farm, 22 miles out, destroyed.

Danville, Va.—Pittsylvania Wholesale Hardware Co. damaged.

Everett, Wash.—Weyerhaeuser Timber Co.'s pier destroyed.

Hoquiam, Wash.—Strand Cannery Plant destroyed. Explosion.

Pehasten, Wash.—Pehasten Lumber Box Inc. damaged. Faulty power equipment.

Pullman, Wash.—Farm buildings of Cletus Semler destroyed. Short circuit.

Tacoma, Wash.—Parkland Theatre and realty office destroyed. Explosion.

Yakima, Wash.—Lovering Fire Co. building destroyed. Faulty wiring.

Grant Town, W. Va.—Tipple of Eastern Gas and Fuel Co. mine damaged.

Milwaukee, Wis.—Viking apartment building damaged.

Milwaukee, Wis.—Three-story apartment building damaged. Explosion.

St. Francis, Wis.—Railroad bridge damaged. Fire started by two boys ages seven and eight. □□

Coming events

Nov. 27-Dec. 1—University of Miami Fire Investigation and Subrogation Seminar. To be held at the Carillon Hotel, Miami Beach, Fla. For information, write Dr. Dan Steinhoff, Jr., Dean, Adult Education, University of Miami, Coral Gables, Fla. □□

Nov. 27-29; December 4-8—National Fire Protection Association Technical Committee Meeting. To be held at the Hotel Manhattan, New York City. General Manager, Percy Bugbee, 60 Batterymarch Street, Boston 10, Mass.

December 13—Southern California Conference of Fire Prevention Inspectors. Monthly meeting, Redondo. Corresponding Secretary, Ira A. Anderson, c/o Fire Department, Rialto, Calif.

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Association news

Barrus Heads Utah Firemen

Albert R. Barrus, Grantsville Fire Department, was elected president, Utah State Firemen's Association at the 53rd annual convention in St. George. He succeeds Chester Mills of Price. Other officers include: William G. Ruff, Springville, first vice president; Julio Paolasso, St. George, second vice president; and Alex R. Rhoan, Tooele, treasurer. John J. Creedon, Bingham, was re-elected secretary, a position he has held for 31 years. *E. W. Fair*

Golfi Heads Montana

New officers named to head the Montana Firemen's Association during the 69th annual meeting in Kalispell, include: Hugo Golfi of Red Lodge, president; Tom McGovern, Dillon, vice president; John P. Flies, Helena, re-elected secretary-treasurer; and Paul Scarborough of Billings, Ray Lynch of Dillon and Roy Burditt of Missoula, re-elected directors. Havre will host the 1962 convention. *E. W. Fair*

Connecticut Firemen Elect Smith

Jack Smith of Milford, Conn., was elected president of the Connecticut State Firemen's Association at the recent annual convention in Bethel. He succeeds Chief Leno Vescovi of Groton.

Other officers are: J. Franklin Dunn, Middletown, vice president; John Moehring, Stamford, re-elected secretary; Andrew J. Flanagan, New Haven, re-elected treasurer, and the Rev. Michael J. Thompson, pastor of St. Agnes Church, Niantic, chaplain. *Tom Magner*

Canadian Chiefs Elect Swanborough President

Chief R. F. Swanborough, Hamilton, Ont., was elected president of the Canadian Association of Fire Chiefs, division of the International Association of Fire Chiefs, during the 53rd annual conference at Kitchener-Waterloo, Ont., August 20-24. He succeeds Chief Walter Redman, who recently retired from Flin Flon, Man.

Elected to serve with him are: Chief D. S. Dunnett, Winnipeg, Man., first vice president; Chief M. C. Mathers, London, Ont., second vice president; Chief Kenneth Putnam, Kitchener, Ont., director, IAFC; Chief Walter Scott, Galt, Ont., sergeant at arms; and Chief L. A. Burch, St. Catharines, Ont., membership chairman.

Chief Allan H. Clark, Lakefield, Ont., was re-elected secretary-treasurer, and Miss Jean Clark was re-elected assistant secretary. James L. Arnott, Toronto, Ont., was again named conference manager. *A. H. Clark*

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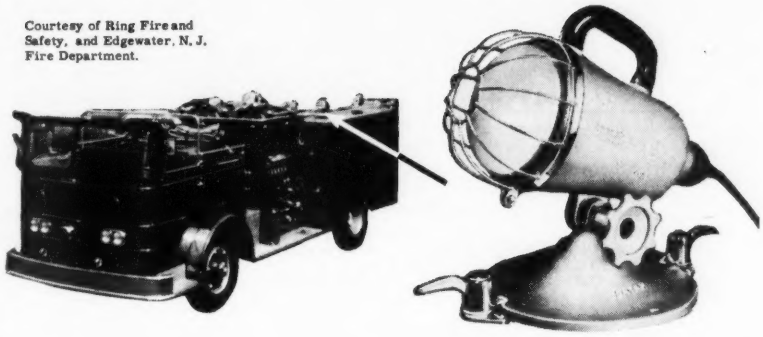

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Names in the news

Veteran Chief Honored By Albuquerque, N. M.

Chief W. A. (Art) Westerfeld, head of the Albuquerque, N. M., Fire Department for the past 30 years, was recently honored by the city commission for his 42 years of service by having August 28 proclaimed as "Chief Westerfeld Day" in that city.

Chief Westerfeld joined the department in 1919 as a temporary fireman "for a couple of weeks" to help out during a flu epidemic. At the time there were 11 men, two motorized pumpers and a horse-drawn wagon in the department. Today the roster numbers 279 men manning 16 pumpers and three trucks.

After serving as a driver, mechanic, and captain-in-charge-of-mechanics, he was named assistant chief in 1931 and became chief during the same year.

Bell Heads Canada UL

Harry M. Bell, assistant manager, Royal-Globe Insurance Group, was re-elected president of Underwriters' Laboratories of Canada at the board of directors' meeting on May 30. Other officers re-elected were S. W. Duck, first vice president; T. N. Johnson, second vice president; E. C. Duff, secretary-treasurer; and Edward F. Tabisz, general manager.

Kennedy Trains Alaska Fire Marshals

John Kennedy, chief special agent, John A. Kennedy and Associates, Chicago, recently was commissioned by the State of Alaska to conduct fire investigations schools for fire marshals and other state and local personnel.

Beginning in September at Anchorage, the three-day sessions were conducted over a period of three weeks in Juneau, Fairbanks and Ketchikan. In attendance were deputy state fire marshals, state police, F. B. I. resident agents, city fire officers and policemen, Naval Intelligence personnel and members of the Criminal Investigations Division, U. S. Army. The schools were conducted with the cooperation of the State Fire Marshal Robert F. Crouse and Public Safety Commissioner Martin B. Underwood.

Swanson Named by IAFC To Medic-Alert Board

Chief Wayne D. Swanson, Rockford, Ill., Fire Department, and past president, International Association of Fire Chiefs, was recently named to the advisory board of the Medic-Alert Foundation International. His appointment was requested by Chief William J. Taylor, IAFC president.

The Medic-Alert Foundation provides life-saving stainless steel or silver bracelets with a warning of the medical problems of the wearer engraved on the back. The words "Medical Alert" and the medical insignia serve to alert firemen, rescue squadmen and others of the problem and required medical attention of victims. □□

The round table...

Discussion of current fire department and fire management problems

Wetting Agents in the Fire Service

THIS IS THE SECOND installment of the Round Table on wetting agents in the fire service.

Readers are invited to participate in the discussion which will continue in the December issue. Address replies to Round Table Editor, FIRE ENGINEERING, 466 Lexington Avenue, New York 17, N. Y.

The Discussion

B. P. Lemieux, Chief, Calgary, Alta.: We do not use wetting agents in our extinguishing operations. We have used them in hand pumps for fires in mattresses, chesterfields, upholstered furniture, etc. While they seem to help in this type of fire, removal of the furniture from the room to the outside will serve the same purpose.

We find the added cost to be a disadvantage.

Robert A. Costa, Assistant Chief, Oakland, Calif.: Wetting agents are used for fires of a nature where the water tank on apparatus or hand extinguishers can be employed. Each piece of apparatus with a water tank has wet water in the tank at all times. All hand extinguishers of the pressurized water type are also equipped with wet water.

We carry a portable proportioner on our squad-type piece of apparatus which operates in the congested high-value district on all alarms and which responds on greater alarms in other designated districts. This apparatus is available on special call for operations anywhere in the city, thereby making the portable proportioner available for extensive operations if needed.

Advantages of using this agent are: (1) Faster penetration into deep-seated fires in overstuffed furniture, mattresses, etc.; (2) less run-off onto floors and furniture, thereby reducing water damage and fire loss; (3) a smaller quantity of water is needed for extinguishment, thereby making water in tanks and hand extinguishers stretch farther; (4) overhaul time is reduced, allowing apparatus to get back in service much faster; (5) grass, brush and duff fires are controlled more rapidly and the greater penetration experienced reduces chances of rekindle.

Up until the present time, our department has had no experience which we could classify as a disadvantage in the use of wet water.

J. D. Brooks, Captain, Gadsden, Ala.: Wetting agents are used in this department only for specific applications. The proportioners are permanently mounted on apparatus.

One of the advantages of this extinguishing agent is its penetration, thereby saving water. A disadvantage is the fact that the unused portion of the capsule evaporates.

A. Z. Lokey, Chief, Greenville, Miss.: We did use wetting agents for all booster tank fires with good results. We did find that they rust out our booster tanks in just a short time, so we are not going to use them again until we get equipment to proportion them into our booster lines.

We believe that every fire chief should judge for himself, but we are of the opinion that wetting agents are too costly for

THIS MONTH'S QUESTIONS

- **Do you now use wetting agents in your extinguishing operations?**
- **If so: (a) Do you use them at all general fires or only for specific applications? (b) Do you use permanently mounted or portable equipment to proportion them into hose lines?**
- **If not, do you intend to adopt wetting agents in the foreseeable future?**
- **What advantages have you found in the use of these agents?**
- **What disadvantages have you been able to determine due their use?**

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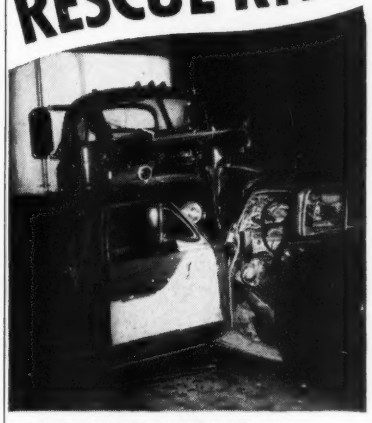

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operations calling for more than 500 gallons of water.

R. P. Eddy, Chief, Swansea, Mass.: Wetting agents are used only for specific applications. Both permanently mounted and portable equipment are used to proportion them into hose lines.

With these agents, the water goes much farther and penetrates deeper, particularly since we must depend on tank trucks to some extent.

If properly used and proportioned, there are no disadvantages to using them, in my opinion. We use them on all deep-burning fires and gas and oil fires.

For the past ten years we have been using the capsules and the blender. Previously we used wetting agents dumped in the tanks, but found them harmful to the pumping equipment.

Gerald F. Lowe, Chief, Pueblo, Colo.: We use wetting agents to a very limited extent, only for specific applications such as mattresses, baled rags, etc. They are proportioned into hose lines by portable equipment.

While penetration is much better and there is less chance of rekindle, we have found some additional water damage, particularly in stocks of paper. The benefits to be gained do not offset the cost of the agents when used for general fire fighting.

Cecil Harrison, Chief, Sheridan, Ore.: We have been using wetting agents in our department operations for years, but only for specific applications. We use applicators on some equipment, but on others we add it to the tank at the scene of the fire.

We find that on rural fires, particularly in barns where hay or feed is stored, or in heavy stubble fires, with a wetting agent the fuel is moist clear to the ground and keeps the fire from rekindling. It is possible to cover a much larger area faster with considerably less water.

The disadvantages we find apply to fires in homes or certain mercantile buildings. Wetting agents can become very destructive to various types of exposures such as overstuffed furniture, walls, drapes, etc. They are extremely beneficial in fire fighting, but care must be used as to when and where to apply them. If caution is not taken, the water damage from wet water may be greater than the fire damage.

We never keep our tanks loaded with wetting agents. We carry the amount needed for the booster tank and add at the scene of the fire.

R. L. Catlett, Assistant Chief, Louisville, Ky.: At the present time the Louisville Fire Department has on order a specially designed chemical unit for response to alarms of fire to paint manufacturing plants, airports, etc. Included

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EDWARD A. O'RORKE,
Vice President

Sworn to and subscribed before me this 20th day of September, 1961.

WALTER H. FREDERICKS,
Notary Public, State of N. Y. No. 41-6391975 [SEAL]
Qualified in Queens County
(My commission expires March 30, 1962.)

in specially designed equipment for this unit is a built-in proportioner for wetting agent solution.

E. E. Malloy, Chief, Newark, Ohio: Wetting agents are only used for specific applications. They are proportioned through the 1-inch booster line as needed by means of a permanently mounted proportioner with a two-way valve. We use a cartridge-type system.

They are very effective when used on fires in mattresses, overstuffed furniture, auto seats, baled materials, etc.

No disadvantages have been noted to date; however, our experience is limited to minor applications. I personally am in doubt as to advantage versus cost for extensive use.

H. E. Simpson, Chief, Portland, Ore.: Wetting agents are used for specific applications. We mix the agent into the tanks on our apparatus.

We feel they are particularly effective on grass and brush fires, stored grains, baled goods, overstuffed furniture and old wood roofs. They are of some help for cooling tanks containing burning liquids because of the clinging or coating factor when applied to an outside vertical surface.

We use a powdered agent which is quite economical, costing approximately 9 cents per hundred gallons of water. It is also easily soluble and quite effective. Our difficulties have been with the ability of the detergent to cut through oils and greases which have caused the replacement of bearing, packings and pump seals. We have solved this problem by instructing our companies to carry the wetting agent with them, dump it in their tank when occasion demands, then flush out the tank and pump after using. We have been informed by the State Forest Service that they carry it in their tanks and pumps without ill effects. The difference seems to lie in the fact that the Forest Service uses smaller positive displacement pumps and the construction of these does not expose them to the damage our larger centrifugal pumps have sustained. The only other disadvantage we have noted is that some care must be used in mixing the agent in the water lest excessive foaming occur.

Holland S. Knight, Director, St. John, N. B.: We use wet water capsules, but only for specific applications. We did have a proportioner permanently mounted, but are now using it as portable equipment with a 1½-inch line.

We find wetting agents good when used in chip hopper or pulp mill. In one case the chips were soaked to a depth of 15 feet and the fire killed. They are also effective on woods fires, fires in chesterfields, automobile cushions, etc.

In many cases the use of wetting agents will increase the insurance loss, due to the necessity of removing woodwork, plaster board, etc., before the material can be repainted. We have found that fog will do a better job on surface fires with less water damage. □□

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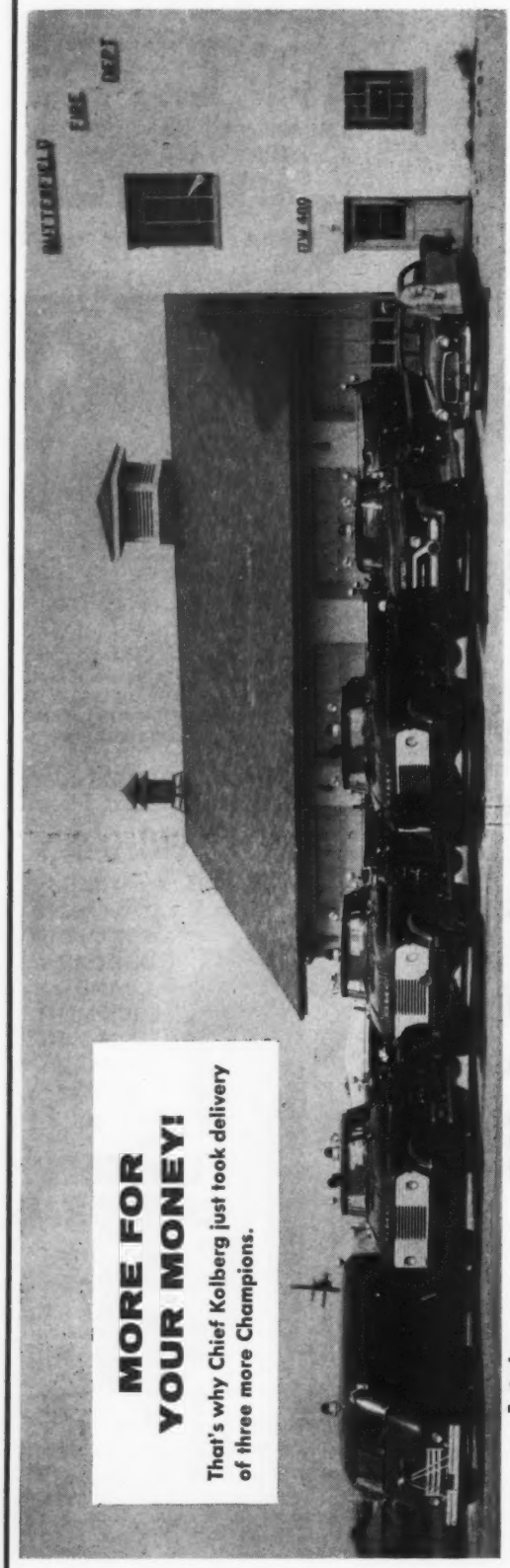

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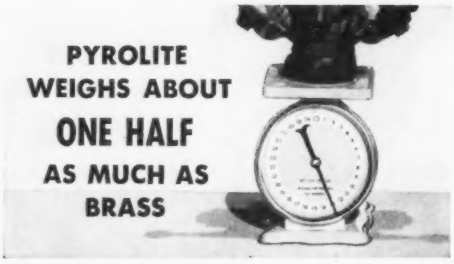

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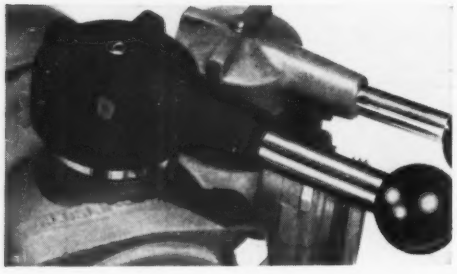

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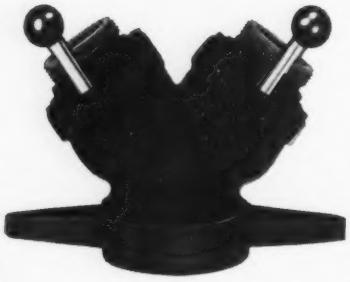

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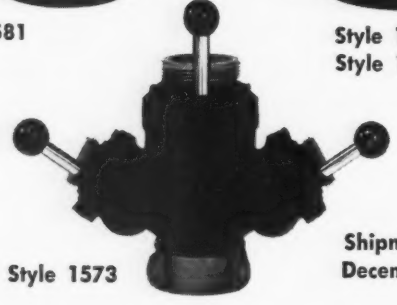

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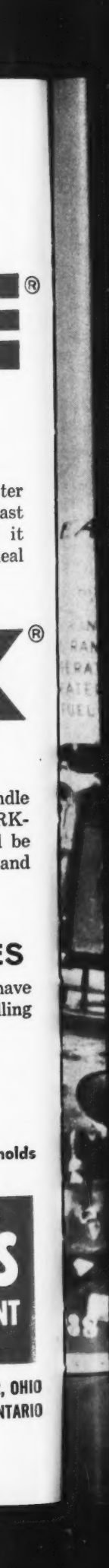
FIRE FIGHTING EQUIPMENT

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